REPEATER JOURNAL

ORGANIZED 1971

CAROLINAS - VIRGINIA REPEATER ASSN. INC

FEBRUARY, 1979 "IN OUR 8th YEAR" VOLUME 8, NO. 1

- CVRA ANNUAL DIRECTORS MEET - STORIES INSIDE
- MOONBOUNCE (EME) SEE COVER STORY
- UPDATED REPEATER INDEX FOR 8 STATES
- THE AUTOPATCH BLUES EDITORIAL COMMENT

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ON THE COVER

The EME Array of WB4EXW, four F9FT's at center of tower fed with Hardline. Photo by Watson, WB4EXW. See story this issue.

EDITORIAL COMMENT

ASSESSMENT OF REPEATER COUNCILS

With the coming of a new year, it is encouraging to see figures and hear good news about various repeater councils (similar to the CVRA) in our neighboring States.

I think as our 2-meter band continues to fill up with operators and repeaters - more groups are looking to the Councils for guidance. There is NO WAY any individual can keep up with what is going on all around him. There is NO WAY a prospective new repeater owner can determine for sure he will choose a "clear" frequency for his new repeater. In the first place he doesn't have the experience to determine which frequencies are best suited for his particular location. Secondly he doesn't have the resources to determine which repeaters are under construction around him whether it be the next county or the next state.

This is why the repeater councils are getting more and more important. The CVRA has started off 1979 with an all-time record of full membership renewals, and several new members. We obviously don't know how many we will ultimately have as full members this year, because many wait until mid-January or February to join (past

Continued on Page 19

Some Thoughts on the Auto-Patch

When the FCC again interpreted Section 97.79D concerning the logging of 3rd party traffic and the presence of a control operator, as it also applies to repeaters and auto-patch calls, the Repeater fraternity was quite "shocked".

I think we all became lax and began to add to the interpretation of the rules as the Commission continued its deregulation. With the advent of the "automatic" repeaters ruling, utilizing tape machines to do our logging for us, we naturally assumed that the tape machine could do the job of logging 3rd party traffic also. Boy, were we ever wrong!

Some few repeaters after the interpretation of the commission, immediately shut off their Auto-patch systems. Others went the route of re-installing live monitors, some repeaters were fortunate to have never stopped the procedure of live monitors. Some repeaters have come up with different ways of getting the Auto-Patches going again.

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Plus, a Special For Our Membership, An Updated Copy of the CVRA Articles of Incorporation and Bylaws. A 16 page section in the Center of This Journal you can pull out and Keep.

NEWS & AD DEADLINE FOR MAY JOURNAL - APRIL 1, 1979

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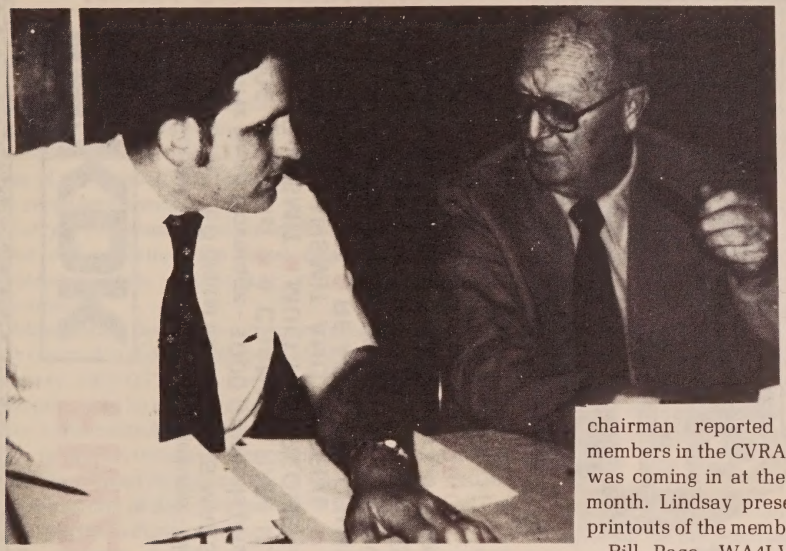
CVRA ANNUAL BOARD MEETING IN GREENSBORO



STRATEGY is planned by Charlie Durst, WA4WTX, President and Al Ross, K4CAW, Frequency Coordination Chairman before the annual Board of Directors meeting held last month. Ross worked with the new Directors to help them along their way of getting into the position of Frequency Coordination in their respective Districts.

The annual CVRA Board of Directors meeting was held January 7 at the Airport Holiday Inn near Greensboro, N.C.

Some 21 persons were on hand for the all-day meeting. Charlie Durst, WA4WTX, president of the CVRA called the meeting to order at 10 a.m. He introduced each member and appointee present.

The new State Directors and vice Directors were installed. Representing South Carolina was Jack Watson, Jr. W4YPD, Director; and Bob McCormick, K4FRX, Vice Director.

Carter Cogle, K4ARO, elected to serve another term as Virginia Director, introduced his new vice director, Amos Rhames, K4WQS.

Ken Woodard, WA4BVW is the new North Carolina Director. Serving as vice-director is Ed (Buff) Buffington, W4VGZ.

The Directors had a session with Al Ross, K4CAW, chairman of the Frequency Coordinating committee. (Each Director is a member of this committee, and coordinates frequencies for his own State).

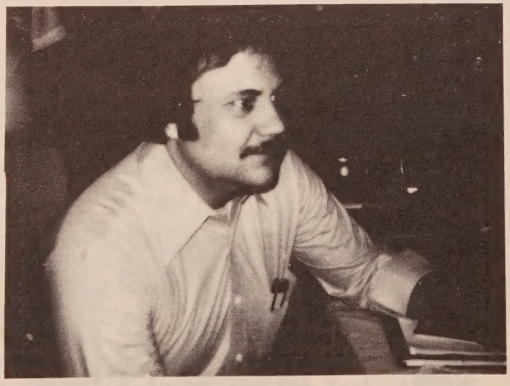
Carl Smith, N4AA, Treasurer of the CVRA reported funds for the Organization are in good shape, with the new Associate Membership fees, full membership fees and increased ad rates in the Journal. He said the increases will offset the additional costs of producing more Journals as membership rises, and cover expenses of larger Journals when necessary.

Lindsay Cleveland, W4IZI Associate Membership chairman reported in excess of 2,200 Associate members in the CVRA organization. He said membership was coming in at the rate of over 100 new members a month. Lindsay presented the officers with computer printouts of the membership.

Bill Page, WA4LWX, Full Membership chairman reported a total of 131 full member groups at the close of the year. He said a record 67 groups had joined or renewed their 1979 membership by December 12, 1978.

The group discussed various topics including the approval of the ARRL 10-meter band plan, to support Virginia Amateurs in the "Quiet Zone", look into the application for Non-Profit Status for the CVRA, and

Continued on Page 7



TECHNICAL EDITOR, Watson Gabriel explains to the meeting of Directors the ways of putting on paper technical ideas and helping hints for the CVRA Journal. He told Directors to be on lookout for new ideas designed by repeater groups in their Districts, and to pass them along for publication.

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TIDEWATER AMATEURS MEET WITH FCC ENGINEER

- by Cecil Oliver, N4AQQ
CVRA FCC Liaison Committee

At the request of a group of repeater operators in the Tidewater, Virginia area, a meeting was held in the Norfolk, Va. office of the FCC in late December. The purpose of the meeting was to discuss the regulations covering repeater operation.

Jerry J. Freeman, Engineer-in-charge answered questions and explained the latest regulations governing autopatch use, and other repeater oriented information.

Most points that came up concerning the autopatch are covered in the "Washington Mailbox" column in the January, 1979 QST. The essence of the rules are that a repeater must be under control, either remotely or locally by a live control operator for normal autopatch operation. In certain instances Emergency use of autopatch is possible without live monitors, if the autopatch system has some form of device to prevent it from being used for other purposes during absence of live monitoring.

The question of "What is an emergency" was asked by the group. The FCC engineer explained that a life or death situation to a disabled vehicle on the road may be considered an emergency. Since there is always the possibility of being hit by another vehicle as well as other dangers to both the vehicle and its occupants. He did note "asking directions" was not an emergency.

Mr. Freeman also called to the groups attention Part 97.87E of the FCC rules, which provides that a repeater identification must be "at a level of modulation sufficient to be intelligible through the repeated transmission." He said it seems many repeater operators are not aware of this requirement.

Our thanks to Mr. Freeman for taking the time after working hours to meet with the area Tidewater Amateurs, and to Wally Burkette, WA4KXV, CVRA Assistant Director, for Tidewater for arranging the get-together. *(Editor's Note: See related Editorial on Autopatch regulations this issue)*

NEW OFFICERS ASSUME DUTIES IN COLUMBIA REPEATER SOCIETY

New officers for the Columbia Repeater Society were elected during the December meeting and assumed office in the Columbia, S.C. club Jan. 1, 1979.

Al Link, K4ICL is President. Jim Robb, WA4KXD, VP; Bill Weathersbee, WB4UGV, Sec.; Al Edwards, WB4KQJ, Treas., and Doub Welborn, K4LNU, Trustee of the repeater.

WHO'S ON FIRST!

Generally speaking when two repeaters miles apart begin to have interference problems, it is a result of one of the machines making some change to their antenna, power, pattern, or location.

When the CVRA coordinates a frequency for a group, the coordination of that frequency is for the location, specification, and power submitted at the time of the frequency request.

When a repeater increases power, moves higher up on a tall tower, moves to another location, or from a hill to a mountain, the CVRA must consider this A NEW REPEATER. As for who's on first . . . if first moved his machine after second got on . . . the second is now on first!

In plain simple language: Repeater "A" went on the air in 1972. Repeater "B" came on the air in the Spring of 1978. Both machines worked fine with no problem. In the fall of 1978, Repeater "A" moves to a tower 400-feet higher, resulting in massive interference from operators of both repeaters. Who is at fault? Repeater "A" is at fault, and is responsible to make necessary changes to prevent the problem from continuing.

If you plan a move or big change to your machine, please be sure to let your State Director know, in writing, so he will have it on file. Who knows, a year from now you may need the documentation. You might need to coordinate again, maybe even change frequencies.

IREDELL COUNTY ARS ELECTS NEW OFFICERS FOR 1979

- By Vester Boone, WA4UPH

The Iredell County ARS (Statesville, N.C.) elected new officers at their December meeting for the 1979 year.

Sherrill Parks, W4SDT, was elected president with Dave McDonald, WD4LXB , VP; Hugh Henline, W4JOP, Sec.; Andrew Causey, WD4BUO, Treas. and Steve Sallee, N4QG, 2-year Term Exec. Board.

Sherrill Parks was also elected club representative to serve with Don Summers, AI40, repeater trustee for their full membership in the CVRA.

The ARRL film "Moving Up To Amateur Radio" was shown with the local CB Club who were guests.

The Iredell club owns and operates the Statesville 085-685 repeater. The club meets every 2nd Thursday at the Hall of Justice in Statesville.

TECHNICAL TIP—Question: If a 50-ohm load is connected to a half-wavelength piece of 75-ohm coax, what impedance is present at the unconnected end? Answer: 50 ohms

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10 METER BANDPLAN ADOPTED

At its January meeting, the CVRA Board of Directors formally adopted the accepted ARRL 10-Meter Bandplan. Since there had been no requests for 10 meter repeaters in CVRA territory, there had been no need for a Bandplan.

Frequency Coordinating Chairman Al Ross told the group that a plan should be formally adopted by the CVRA since the frequency coordinating charts, frequency lists and repeater indexes are now on the computer.

Carter Cogle, K4ARO, Va. Director went over the ARRL 10-meter plan and the Board, on motion, voted unanimously to adopt the simple plan.

The CVRA band plan for 10 meters consists of 4 repeater pairs, low in and high out, with 29.60 mhz. as the National Simplex Frequency. The repeater pairs are: 29.52-29.62, 29.54-29.64, 29.56-29.66 and 29.58-29.68. (Editor)

CVRA ANNUAL BOARD MEETING HELD IN GREENSBORO

Continued from Page 3

changes to the Articles of Incorporation & Bylaws.

Phil Wicker, W4ACY, ARRL Roanoke Division Director spoke briefly about the ARRL, the CVRA territory SCM's and other appointees and the part they can play in communicating with the CVRA Directors and membership.

The Directors discussed voting privileges of full members and service of their repeaters. It was agreed that when a repeater is turned off or not in service, the full member should lose voting privileges in the CVRA.

Concerning the "Quiet Zone", the Board voted to send comments to the FCC on the Proposed rule-making, being opposed to the "Quiet Zone" and supporting the effort of the Virginia Amateurs who will be affected. Congressmen, Senators and Governors in the CVRA Districts will also get copies of the comments with cover letters.

The board strongly recommended that officers educate repeater owners to the fact, that making changes to repeaters or antennas, the CVRA should be notified in writing as to their plans.

The meeting was adjourned at 4:00 p.m. (Editors Note: See various stories in this Journal about items covered at Board meeting.)

TECHNICAL TIP—Microphones and microphone cables are relatively fragile items. Treat them as such and you may save yourself some money and lost operating time.

Repeater Membership Reaches 50% of 1978

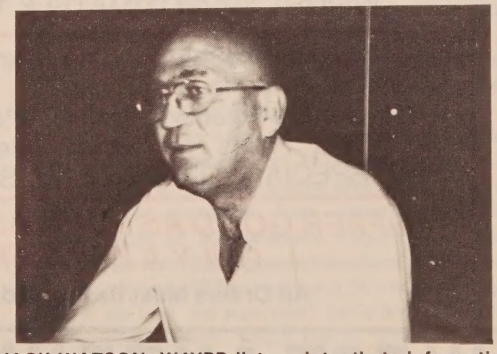
-by Bill Page, WB4LWX

Half of CVRA's Full Member Repeaters in 1978 renewed memberships in advance for 1979! This outstanding response occurred as a result of a letter with renewal forms being mailed from Burlington December 1, 1978.

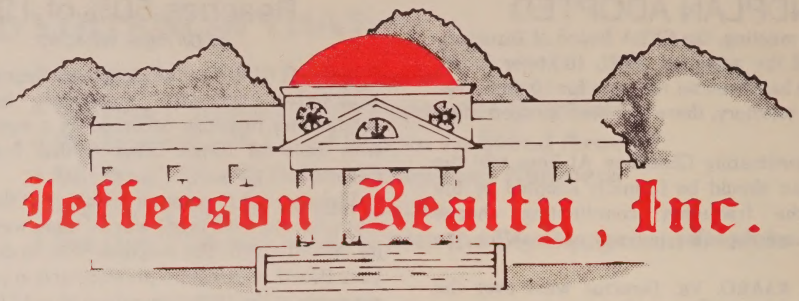
There were 132 repeater members at the close of 1978 and when the final count was in, there were 66 renewals on Dec. 31, 1978. The response was no doubt helped by your Board of Directors previous action permitting 1979 renewals at the 1978 dues rate of $6 until January 1, 1979 when the Full Membership dues increased to $8. An Honor Roll listing of those repeaters who did renew in advance is found elsewhere in this issue.

A slightly revised Repeater Membership form has been devised and it's important that the information form accompany renewal checks so the JOURNAL will have updated information on each member-repeater, so the Frequency Coordinators will have the latest word on changes, and so the computer will have the current names, addresses, callsigns and telephone numbers of the Repeater Representatives. With the WR repeater callsigns gradually phasing out, we can only keep the quarterly listing accurate when we receive these changes annually.

If your home repeater is not listed on the Honor Roll, how about checking with the trustee or Repeater Representative and ask one of them to send in a renewal of membership. Repeater dues for 1979 are $8 which should be sent along with an information form to: William S. Page, WB4LWX, Repeater Membership Chairman, P. O. Box 871, Kinston, NC 28501.



JACK WATSON, W4YPD listens intently to information being passed along to the new Directors at the Annual CVRA Board of Directors meeting held in January. Jack assumed Directorship for the South Carolina District, CVRA on Jan. 1.



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THAT PROPOSED "QUIET ZONE" CAUSING QUITE A NOISE

-by Wayne C. Williams, K4MOB, Editor

It has been called a "Quiet Zone" since 1952, but it made a crash heard across 3 states when the FCC presented Amateur radio with a notice of proposed rule making. The proposal caught everyone off guard. Essentially the Green Bank Observatory located in Eastern West Virginia wants Amateur Radio included in their "Quiet Zone".

What they propose is to claim the condition that when the quiet zone was set up around the observatory (actually the only one in the country) in 1952 and Amateur Radio was deleted because at the time, population density didn't justify this action.

Now Green Bank wants Amateurs included. The proposal mentions only REPEATERS, but deleting the word repeaters could cover ALL aspects of Amateur radio. The quiet zone requirements would include: any changes to antenna, pattern, power or anything which would cause a change in signal from a repeater located in this 100 mile area would have to be approved by the Green Bank Observatory, with recommendations to the FCC, who would act accordingly to their recommendations. (Past hisotry with other services shows Green Bank NEVER acts positively in any change or addition)

This in effect would place a great burden on Amateur Radio in this area, causing fantastic regulatory problems that only professional lawyers could figure out.

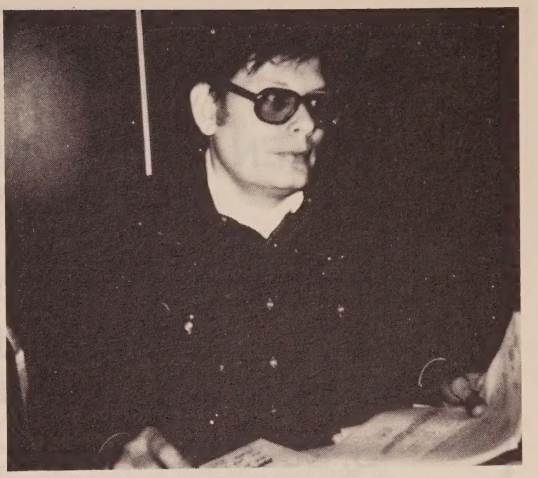
Green Bank, an observatory which monitors signals "from space" reportedly can distinguish "man-made" signals with no problem. Up until June of 1978 there seems to have been no problem, and Green Bank and the Sugar Creek Naval Observatory lived in harmony with Amateur Raido.

Never once has Green Bank come out and answered any questions such as: Are you getting interference. In what form? Why the sudden change in attitude of Amateur Radio? What about transient mobiles passing through? What about airplanes passing? What about satellites?

Green Bank has to my knowledge remained silent. We have been unable to get any information from them of any type, as to why this sudden change of heart with Amateur Radio.

Informed sources report that Emergency, and police communications in cities within the area are greatly hampered with communications systems that won't even cover the area in which they are responsible. Even hospitals with electronic equipment are hampered in their modernization plans.

Why does Green Bank need all this "protection". None of the other observatories in the United States seem to need a "Quiet Zone" and most especially don't seem to have any problems with the Amateurs.



CARTER COGLE, K4ARO, Virginia Director for the CVRA discusses Virginia information during the annual Board of Directors meeting. Carter was re-elected to another 2-year term as Virginia District Director.

We haven't heard both sides of the story because Green Bank as we say, won't talk. We have only been able to read documentation and look at the effects of this docket which mentions Amateur Radio Repeaters being included in the Quiet Zone.

If Green Bank is successful in this docket through the FCC, who knows what will happen next. What's to say it won't spread to other Observatories and even help the FCC establish quiet zones around their 13 monitoring stations.

Approval of the Green Bank quiet zone docket could set a dangerous precident for Amateur Radio and every other form of communications that exists.

The CVRA has gone on record of opposing this docket and wrote comments to the FCC prior to the deadline which was February 1. It will be interesting to see if the streams of comments from dozens of Amateur organizations in Southwestern Virginia and Eastern West Virginia to Congressmen, Senators, Governors and the Commission will be considered. We can only hope so. Even if we lose, we sure tried. Let's hope the outcome will be in our favor, which maybe would set another precident, commercial, police and emergency communications could also get out from under this blanket which is holding back signals to a minimum, preventing them from hardly covering their areas. It just doesn't make sense.

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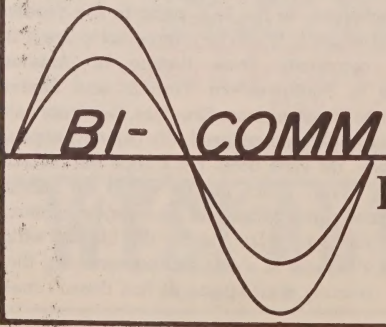

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FCC RFI DOCKET INFORMATION BEING DISTRIBUTED

The FCC Inquiry, General Docket 78-369 (FCC Docket 78-801) was introduced November 15. Due date for comments will be May 1, with reply comments due July 1.

The inquiry which will "study the problem of radio frequency interference and the need for Government regulation to help lessen such interference" is being held by the commission. The NOI solicits comments from consumers, equipment manufacturers, economists, engineers and government agencies.

Over the past several years, tremendous growth has occurred in the field of Communications. Particularly the explosive growth in the use of two-way radio for personal and business communications has contributed to the greatly increased number of interference complaints received at the FCC. Many of these complaints concern RF emissions which are intercepted by electronic equipment not designed or intended to receive the signals. (Home entertainment equipment represents 73% of all the complaints.) The equipment includes AM/FM radio, TV, tape recorders, electronic organs, telephones, stereo/hi-fi systems, video games and other equipment commonly found in the home.

Other interference complaints include interference by RF to air navigational aids, heart pacemakers, ekg equipment, truck braking systems and explosive devices.

FCC studies indicate that a high percentage of these interference complaints involved deficiencies in the design and installation of the receiving equipment (even when the transmitting equipment met all FCC technical requirements). Often the addition of filters or shieldings to the affected equipment will eliminate the interference.

Presently the Commission has few rules and regulations governing the design and/or installation of the receiving equipment. The Commission has acted to improve transmitter standards for compatibility with home electornic equipment.

Various bills have been introduced in the House and Senate, looking toward giving the FCC the authority to establish certain required standards for home electronics.

Government regulation may not be the solution that is most in the public interest since it is clear that increased immunity to interference will result in higher cost to produce the equipment.

With this in mind, individuals who have technical knowledge of RFI problems, and information regarding possible ways to regulate, or improve immunity of interference should file comments with the FCC on this notice of inquiry.

FCC EXAMINATION SCHEDULE FOR FIFTH DISTRICT

CHARLOTTE, N.C. Jan. 10, 11 & July 11, 12
SALEM, VA. March 7, 8 & Sept. 5, 6
WILMINGTON, N.C., May 2, 3 & Nov. 7, 8

WINSTON-SALEM, N.C.

February 7-8	August 1-2
April 4-5	October 3-4
June 6-7	December 5-6

Persons wishing to take examinations at the designated cities should send a completed 610 form to the FCC Norfolk office at least 2 weeks prior to the examination date. The FCC will notify applicant by mail as to date, time and place and include a pass to admit person into examination room. All exams are by appointment only. You must bring your pass to get in.

Applicants with visual impairment or other disability must make prior arrangements with the FCC for exams.

The Norfolk office of FCC conducts RADIO OPERATOR EXAMS without appointment during these days: COMMERCIAL PHONE, Wednesday & Friday 9 a.m. to 12 noon. AMATEUR RADIO & TELEGRAPHY, Thursdays at 9 a.m.

ANTIQUE WIRELESS ASSN. REGIONAL CONF. APRIL 7

The Antique Wireless Association Regional Conference, Southern Meet will be held April 7 at the Coliseum Holiday Inn on Independence Blvd. in Charlotte, N.C.

Activities will begin Saturday morning with registration and Flea Market. Equipment contests will be held Saturday morning with judging. Contest categories will include Broadcast receivers, television receivers, ham homebrew transmitters and receivers, military & commercial gear, reproducers, vacuum tubes and literature and advertising.

Saturday afternoon will be devoted to demonstration, lectures and panel discussions. A social hour will commence at 6 p.m. with buffet style Banquet at 7 p.m.

Presentations and awards will be presented at 8 p.m. with a silent movie, showing radio manufacturing in the late 1920's at 8:30.

Special ladies programs are also planned. For more details, registration etc., contact Robert Lozir, 318 E. Houston St., Monroe, N.C. 28110, (704) 283-2638 after 7.

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AMATEUR RADIO STILL GROWING

- By Mike Williams, WA4JIY

The census of amateur radio operators in the United States published at year's end shows that the growth of amateur radio is continuing, at a deliberate, but not spectacular rate. The figures of 1979 compared to 1978 show an overall increase of 7.1% in the ham population. Some areas of the country, particularly those having warmer climates showed increases of over 10%. The largest increase in the continental 48 states was turned in by 7-land with a 10.2% hike. Arizona and Nevada seemed to be the most popular new QTH for hams. All states showed an increase in the number of hams, but 2-land showed the slowest rate of growth. KL7, KH6 and KP4 showed healthy increases . . . all way above the average of the mainland. Puerto Rico wins the prize with the most growth with an increase of 18.5%.

The ladies turned in a good showing in the statistics. Overall their growth was 12.1% in the past year.

In the class of license category, the largest increase was among extras. Those joining that elite group showed a 16.2% increase. The big loser was the conditional class with more than a 30% decrease. The smallest increase was among technicians, which may be a comment on the theory advanced by some people that if you get your technician license and get on two meters you'll never go on to upgrade to general. The general class increased by a respectable 12.2% while advanced class was up by 7.3%. A large number of the extra class operators are DXers and contest operator, and the lure of the shorter, preferred extra class calls may have had some effect on the big increase in extras.

In CVRA territory the largest increase in the number of hams occurred in North Carolina, while the smallest increase was in South Carolina. As compared to the national average of 7.1%, the Old North Stated showed an increase of 8.9%. South Carolina's increase was only 5.3%. Virginia turned in an increase of 7.5% . . . Tennesee, 8.4% . . . Georgia, 8.9%. The biggest jump occured in Florida with 10.3%. Florida still easily 4-land with the most licensed hams followed by Virginia, Tennessee and North Carolina. The smallest number of hams in 4-land are still in South Carolina.

For the newcomer to ham radio working on his WAS, Wyoming is still the rarest state, followed by Vermont. This year Vermont replaced Delaware as the second rarest. It's no secret California should be one of the easiest. There are more hams in California than any other state in the U.S. There are 49,741 hams in California. (Writer's note: The last time I tried to work VR6TC, I'm sure 49,740 of them were on 15 meters at the same time. Of these, 49,739 seemed to be running kilowatts.)

The repeater situation seems to have reached its peak. In the past twelve months there was actually a small decrease in the number of repeaters listed in the U.S. Virginia showed a slight dip in the number of machines, although North Carolina managed to show a small increase. Again, California tops the list with the most repeaters, followed by Texas and New York.

The number of operators using the statellites, based on rough statistics seems to have decreased over the past year.

In summary, recent de-regulation of amateur repeater rules apparently has not resulted in continued large numbers of new repeaters going on the air. The figures just don't support these pre-deregulation theories. The increases in the numbers of new hams coming out of the hundreds of classes being held in the last three years indeed does show a desire on the part of the new hams to progress beyond the technician class. Figures do not show that once a ham gets his technician that he ends up "stuck" on two meters. Also, hams are showing up in areas where the climate is warmer faster than other areas. Finally, if you need Wyoming for WAS, you'll have to be a little patient.

NORTH CAROLINA VHF CONTEST GROUP CONTINUES ACTIVITIES

- by Dave Smith, WA4WZQ

The North Carolina VHF Contest Association is still going strong and having lots of fun. The group located in the mid-western part of North Carolina was organized for the purpose of operating VHF-UHF contests. They support contesting 100% and back the ARRL for providing.

The group participated in the September VHF Contest working 6-meter SSB, 2-meter, FM & SSB, 220 mhz., FM & SSB and 1296 mhz SSB.

The group reportedly does not operate too much 2-meter FM during their contesting, figuring two or three contesters can tie up the few used simplex frequencies on two meter FM and cause headaches for non-contesters wishing to work 2-meter simplex.

The Club net is held every Saturday night at 10 p.m. local time on 144.150 mhz. On the net the group gets together and discusses plans for future contest activities and how they have done on past contests. Code practice sessions are held at the end of each net to keep code speed up. Any other interested Amateurs are invited to check into the net.

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EARTH - MOON - EARTH (EME) OR MOONBOUNCE - IT'S STILL FUN

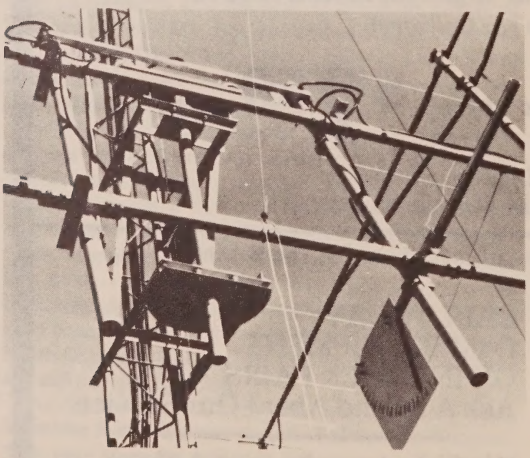
CVRA JOURNAL COVER STORY

— By Watson Gabriel, WB4EXW

This story departs quite a bit from the usual repeater or contest theme. On the 2 meter band and higher VHF/UHF frequencies there comes a time in a VHF DX'ers activities where he cannot make contacts with any new states because they are out of reach using existing propagation methods (trope, sporadic E, and meteor scatter). From North Carolina the maximum is about 37 states on the 2 meter band. Any additional states must be worked by the EME (Earth-Moon-Earth) path or moonbounce as it is commonly called.

Basically EME consists of using the Earth's moon as a passive reflector. That is, one must aim a very directive, high power signal at the moon so that enough signal will be reflected back to the Earth that another station can receive. The round trip path loss is on the order of 250 dB. This path loss must be nullified by the use of high-gain antennas, low-loss transmission lines, kilowatt amplifiers, low-noise receivers, and specialized operating techniques. It is said that if two stations have 600 watts output at the antenna, receiver noise figures of less than 2 dB and antennas with 20 dBd gain (dipole reference) or 40 dbd total between the two stations, EME contacts can be made.

The EME array of WB4EXW consists of four 16-element F9FT Yagis fed by a short length of 7/8 inch Heliax with a low-noise receive preamp at the antenna. This array would be considered a minimum EME array as it only has about 19.5 dBd gain. Contacts with other amateurs having antenna gains of about 21.5 dBd gain or more can be made.



A CLOSE LOOK at the harness and mounting brackets to the tower of WB4EXW's EME antenna system. The metering device in the lower right indicates azimuth to raise or lower the antennas when zeroing in on the moon.

EME TECHNIQUES and various ways of operating moon bounce are discussed by Watson Gabriel, WB4 EXW, Journal Technical Editor, and Dick Hattaway, K4PKV an EME enthusiast. The photo, taken by Debby, WA4NOY, YL of Watson is in his "earth station".

Two amateurs in North Carolina are active on EME using arrays of this type — Watson Gabriel, WB4EXW, of Kernersville and Dick Hattaway, K4PKV, of Mocksville. Both have worked several new states on 144 MHz EME — among them are Washington, Oregon, California, Idaho, and Colorado. Dick has also re-worked the states of Maine, North Carolina, and South Carolina via the moon. Another picture on this page shows Dick and Watson in Watson's "shack." Both amateurs are presently planning larger arrays whereby they will be able to work some states where fellows are active using smaller arrays. Jim Stewart, WA4MVI, of Hendersonville has been active on 2 meter EME for a couple of years and has recently been awarded the sixth 2 meter Worked-All-States award. Jim uses a 160-element collinear antenna which is substantially larger than the quad F9FT arrays.

To catch up on the latest activities in the EME area, one might want to listen to the two EME nets that meet on 14.345 Mhz on Saturdays and Sundays. The 70 cc EME net starts at 1600Z and the 2 M EME Net begins at 1700Z.

THE CVRA CANNOT HANDLE YOUR JOB FOR YOU

An item on the agenda for the annual Board of Directors meeting of the CVRA was the handling of complaints of interference.

It seems that lately several repeater owners who experienced some interference problems sought assistance through the CVRA without even bothering to communicate with the owners of the repeater which was the source of the problem.

Frequency Coordinating Chairman, Al Ross, K4CAW reiterated to the group that the standard separation for same frequency is 100 miles, for 15 khz. 50 miles. He said some machines were experiencing problems with users of repeaters 15 khz up or down. When full separation of adjacent channels or same channels is the case, it should become the burden of the repeater owners to get together and work out some solution to the problem.

Many repeaters are still the old tube-type with "wide-open-scanner" front ends. Newer solid-state machines are better, but when owners throw in a 30 db preamp, selectivity goes out the window.

With the crowding of bands, repeater owners are going to have to take careful looks at their receiving equipment. It must be selective enough not to receive signals of low strength 15 khz away from center frequency. It would be impossible to separate repeaters the distance one would need to prevent interference with the condition that many of the machines are now in.

When you have interference problems from users of another machine nearby, (1) check your sensitivity & selectivity, (2) if your machine is ok, then contact the repeater owner of the other machine. Don't talk on the phone or write, VISIT HIM IN PERSON. Sit down over a cup of coffee and try to work out the problem in a gentlemanly sort of way.

IF the problems persist and you cannot work out something with the other repeater owners after several tries, THEN contact CVRA if you wish assistance. The CVRA has no power of enforcement, it can only advise if asked, and sit with both sides and work for some agreement each can live with.

Al Ross says, "I've yet to sit down at a table with a person or group of people with opposing views, everyone telling their side of the story and not come away with a solution to the problem." When you get people to talk, you are communicating, and communicating is the name of the game.

If you have interference problems, communicate!

Then when the band opens up . . . throw everything out the window until conditions return to normal.

AN ENCOUNTER OF THE FOURTH KIND

— By Rich Tillotson, WA4SSJ

On a recent Sunday afternoon, I found myself home-brewing a cavity filter in my shack. The Midland 220 rig quietly monitoring 223.5 simplex. There was no reason for me to expect that this was not to be tranquil, uneventfull autumn afternoon.

A few minutes had passed when the speaker came alive with "ten-four, come on, good buddy, neggatory," and other lingualorish utterances. You can imagine my surprise. At first I thought there might be a CB station nearby running a moderate kilowatt or two. The QSO (s) continued, revealing that the rigs were new, and something different from what they were used to operating. The comments that were made, started me to thinking that perhaps the equipment had been stolen. I was about to find out otherwise.

I picked up the mike and identified my station, and requested the identifications of their stations. The station closest to mine responded with a CB call sign. I then asked for a telephone number, where I could reach the person with whom I was talking. The person responded with the requested information.

Just moments later, the call was completed, and the ensuing conversation revealed that he had purchased 20 COBRA V H F FM transceivers at a close-out sale. He stated that the owners manual, supplied with the rigs, included a statement saying that it was not necessary to obtain a license to operate the described equipment. This person also revealed that he had set up 18 other units on several different frequencies, and had sold them to small businesses in mid-South Carolina and southern Georgia, to be used as business communications equipment.

I had no sooner hung up the phone, when Ron (WA4MWC) called, to say that he had monitored the same two stations transmitting traffic since mid-morning. Ron and I both monitored the frequency for the rest of the day, and observed several more conversations until early evening, despite my warning to them.

The gentleman called me the next morning to tell me that he had communicated with the Atlanta office of the F. C. C. to substanciate what I had related to him the day before. He also informed me that, he would not operate his station again, and furthermore he agreed, voluntarily, to inform those businesses, to whom he had sold equipment, of the rules and regulations pertaining to the operation of the same.

The F. C. C. requested that I send them a report in written form. I have honored this request.

Continued on Page 34

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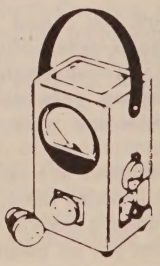

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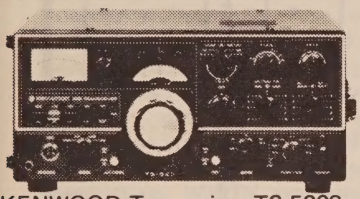

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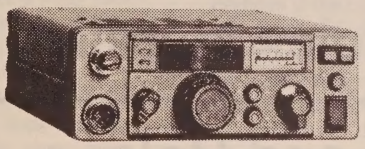

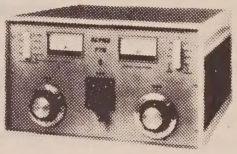

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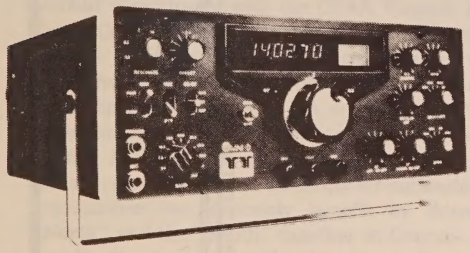

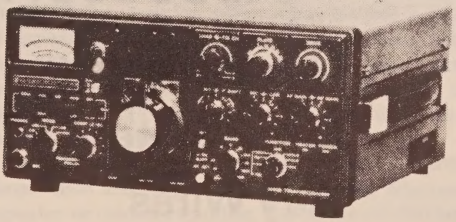

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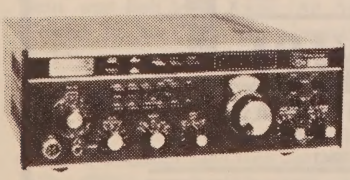

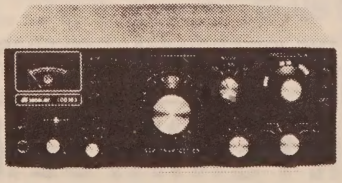

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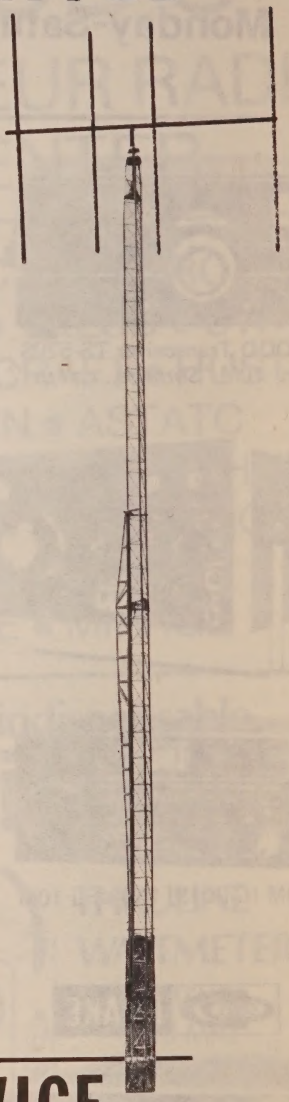

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REPEATER COUNCIL ASSESSMENT

Continued From Page 1

Journal our deadline). If preliminary figures indicate anything, the CVRA should wind up with about 175 full member organizations in 1979, representing over 200 repeaters, in N.C., S.C., Va., W. Va., Tenn., and Georgia.

The CVRA district lines actually represent only S.C., N.C. and about two-thirds of Virginia, but we're finding more repeater groups wishing to support our endeavor by joining even though they are outside the CVRA boundaries. (Such as Ga., Tenn., and W. Va.)

The Middle Atlantic FM and Repeater Council (T-MARC) is rebounding strong this year, after a weak year last in 1978. New officers have been installed and they are very optimistic about the future. T-MARC coordinates the northern third of Va., D.C., Maryland, Deleware, and the Eastern panhandle of West Va. Gary Hendrickson, W3DTN expresses great hope for the Council this coming year. He pledges even more cooperation with the CVRA. Hendrickson, the T-MARC member of their Frequency Coordinating Committee has worked very closely with the CVRA Virginia Director, Carter Cogle, K4ARO, as it should have been and must to prevent problems with border areas where repeaters will be heard in both CVRA and T-MARC territory.

To the South of the CVRA territory the "Georgia Repeater Council" is working hard to get organized and strong. Problems of getting the State together on common ground has been hard, but strong leaders in this organization can certainly benefit by drawing the "North" and the "South" together in Georgia. Greater coordination is needed in this direction and reports from officers down there indicate they are working hard. Steve Norman, WA4LUC, trustee of the Toccoa, Georgia 19-79 repeater, who has been a member of CVRA for several years, has been elected to the post of Director of the North Georgia area for the Georgia Repeater Council. This is heartening since Steve can certainly be of valuable assistance to our new South Carolina Director, Jack Watson, W4YPD.

To our West, Tennessee has worked very well over the past years with area Amateurs designated for coordinating, "unofficially", frequencies for the State. There is a move among several groups in Tennessee to join the CVRA. O.D. Keaton, WA4GLS, ARRL SCM for Tenn. and Bob May, K4SE (An Assistant Director in Western Va. for CVRA) have been traveling and talking to Tennessee repeater groups and clubs for several months encouraging their consideration in joining the CVRA. They have requested the CVRA to send Journals to every Tennessee club, repeater group and repeater owner to acquaint each with our organization.

The CVRA membership voted unamiously in Shelby last year to allow Tennessee to become a District of the CVRA when all requirements are met under the CVRA by-laws.

Incidentally the By-Laws are being re-written and updated to allow groups interested in joining to form additional districts and come into the "umbrella" of the CVRA. (See related stories this issue).

Mutual cooperation between ALL neighboring repeater councils is absolutely essential for each to do the job that has to be done.

Every repeater council has the problem of individuals who do not agree with the way the Council is run. Of course everyone has their own way of doing things.

Perhaps if the complaining individuals would join the associations and run for elective office they could begin to get the organization more to their liking.

Each repeater council, including the CVRA cannot please everyone all the time. The officers and directors make decisions they think will benefit the most. Obviously some people become offended with these decisions.

The days of managing a handful of repeaters has long passed. The job of taking care of over 275 repeaters in the CVRA territory for instance has become a massive undertaking. Officers of the organizations today are like they were 5 years ago, overworked, no pay, and quite dedicated to the cause. So instead of criticizing, those who do . . . join the cause and help mold the future for the betterment of all of us.

No repeater council, in any State can function without cooperation and help from every Amateur who owns a repeater or considers putting one on the air. No matter who you are, or which State you are in, find out who can assist you in your repeater council. (CVRA Directors are listed on the back cover of the Journal) If you are not in CVRA territory, write your repeater council and find out who represents your area, then let him know you support him. You'll be surprised how much better things will be.

You know who will reap the benefits . . . we all will!!

-Wayne C. Williams, Editor

BRIGHTLEAF AMATEUR RADIO CLUB ELECTS NEW OFFICERS

- By Murray Adams, WA4DAN

The Brightleaf Amateur Radio Club of Greenville, N.C. elected new officers for 1979. They are: Bernard Nobles, WA4MOK, President; Dan Sullivan, KE4I, Vice-Pres; Jack Beckwith, WA4VDJ, Sec't-Treas. Murray Adams, WA4DAN, is the editor of "Ham Chatter", the club newsletter.

The club begins its 13th year of operation after celebrating the 12th anniversary at the January meeting. BARC began operating in 1967.

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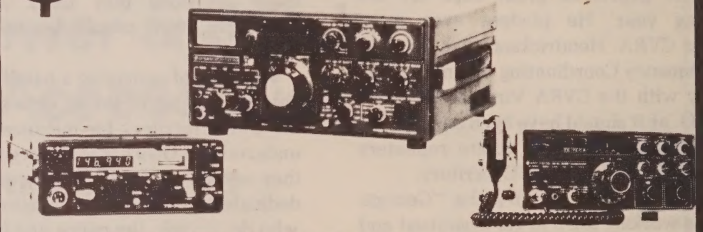

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VIRGINIA STATE NEWS

CARTER COGLE, K4ARO, Director

SALUDA . . . The Rappahannock ARA expects to have its repeater on the air as the Journal is read. The Association has purchased a SCR-1000 Spectrum solid-state machine and a Phelps-Dodge Duplexer and Stationmaster antenna. The machine is installed on the radio station tower in Kilmarnock. The WA4UAF/R machine is on the CVRA coordinated frequency of 93-33. The new machine is expected to provide badly needed coverage between Washington, D.C. and Hampton-Newport News, expecially travelers using Rt. 17. The repeater which will cover the eastern shore area of Northern Virginia will also play an important part in Civil Preparedness as part of a 6-7 county communications link within its coverage area. (Lewis, WA4UAF)

RICHMOND . . . The Richmond ARC, operators of the 34-94 machine is celebrating its 50th anniversary in 1979. It is one of the oldest Amateur clubs in continuous existance. The 34-94 repeater was on carrier access during the 10 day Christmas-New Years Holiday period with much travel information and assistance to Amateur travelers. The repeater is on 24-hours daily and is normally on tone access. (By mutual agreement to prevent interference with the Hampton repeater). The repeater now has information tapes available to all users. By using 7-7-7 on the tone pad. The tapes are changed and rotated daily and contain repeater information for the entire Central Virginia area, meeting information of the Richmond area Amateur clubs, emergency information and special event information. The club mets 2nd Friday of each month at 8 p.m. (Jim, K4OJE)

RICHMOND . . . The new 04-64 repeater for Richmond is now operational 24-hours daily on full power. The machine is sponsored by the Telephone Co. and Pioneers Radio Club and is located on the telephone co. building in Richmond. WB4QEY/R is carrier accessed. (Jim, K4OJE)

GUM SPRINGS . . . The Gum Springs machine continues doing a good job of serving the area on I-64 between Richmond and Charlottesville 24-hours daily. The 87-27 machine is located on the fire tower near I-64 on Rt. 250 between Gum Spring and Hadensville. The machine has joined the CVRA as a full member. (Jim, K4OJE)

DUBLIN . . . Stanley, W4FKX reports the new Dublin repeater is on the air and operating well. The machine is operating on 78-18. (Carter, K4ARO)

PETERSBURG . . . The Petersburg 99-39 is now back up to full power with their new machine with autopatch. (Carter, K4ARO)

SOUTH CAROLINA STATE NEWS

JACK WATSON, W4YPD, Director

NEWBERRY . . . A small group of 2-meter enthusiasts in Newberry are planning to build a repeater for that area. There is no date projected for completion as the proposed machine is now in the planning stages only. (Richard, K4HIH)

TOCCOA GA . . . Steve Normal, WA4LUC, trustee of the 1979 repeater in Toccoa and long time supporter of the CVRA has been elected to the post of Director of the North Georgia District of the Georgia Repeater Council. Steve and Jack Watson, W4YPD, S.C. Director for CVRA will be able to work together to assure good coordination between S.C. and North Ga.

SUMTER . . . Sumter's newest repeater is now on the air as WR4BCM. The 615-015 machine, sponsored by the Sumter Area ARRA has had growing pains, but most problems have ironed out. The repeater is located at the 800 foot level of the WRJA-TV tower in Sumter. The antenna, a Phelps-Dodge Stationmaster, is about 930 feet MSL. Travelers on I-95 should find the machine a welcome addition to 2-meter coverage. (Len, WB4USY)

Sumter-Shaw . . . The Hillcrest Ham Radio Clubs 220 mhz repeater is still under construction. Unexpected problems caused a lengthy delay. However, hope springs eternal and the 222.34-223.94 machine should reach the airwaves this spring. Meanwhile the club's 2-meter machine continues excellent coverage of Sumter County. With the conversion of the local county phone company to the touchtone dial system. WR4AUS now offers autopatch capability to its users. (Len WB4USY)

EASLEY . . . The Altamount ARC has begun construction of their repeater shack atop Sassafrass Mt. in Pickens County. The mountain is the highest peak in the State and should give their 222.46-224.06 machine excellent coverage into Western N.C., NW S.C. and N.E., Ga. Weather permitting, the repeater should be on the air in early March. (Rich, WA4SSJ)

NORTH CAROLINA STATE NEWS

KEN WOODARD, WA4BVW, Director

GIBSONVILLE . . . Danny, WA4YGD reports the long awaited 223.22-224.82 repeater for the Burlington area is now on the air. The machine a part of the original 3.22-4.82 repeater owned by Ray, K4KIP and part built by Danny is used for RTTY and voice operation. The coverted C legg machine is feeding a Phelps-Dodge Duplexer into a Ringo Ranger antenna at Danny's home. Coverage to the West reaches beyond Greensboro, other areas have not been established for coverage. Danny said additional improvements will be made in the future. This is the second RTTY 220 mhz repeater for the area, the other RTTY only is located in Winston-Salem some 50 miles to the West. (Danny ,WA4YGD)

ROBBINSVILLE . . . The Robbinsville repeater has changed frequencies from 915-315 to 735-135 due to interference problems with a Georgia repeater operating low-in/high-out. The group which is joining the CVRA as a full member has the repeater on Joanna Bald at 4716 feet AMSL. The VHF Engineering machine will feed an 8-element Hygain Colinear through a Wacom Duplexer and 1/2-in. heliax. The antenna is mounted on a new 70-foot tower with pattern favoring the South. A link with Knoxville WR4APU is expected sometimes in the spring with the WR4BAN Robbinsville machine. (Sam, WB4HAP)

STATESVILLE . . . The Iredell County ARS has requested coordination with the CVRA for a 220 mhz repeater. The group has not reported any additional information as to when it will be on the air. (WA4 WRS, Bobby)

FRANKLIN-VALDESE . . . Slim, KA4V, Mayo, W4YIU and Arvin, K4RP are experimenting in Amateur TV. They reportedly are looking for contacts on 439.25 mhz. They are audio-video multiplexing at 4.5 mhz. An ATV repeater is planned for the Valdese-Morganton area sometime in the future. (Ken, WA4 BVW)

STATESVILLE . . . .A group of Amateurs in the Statesville area of Iredell County have coordinated the frequency of 222.70-224.30 for a new 220 mhz. repeater for that area. The spokesman, Bob, WA4WRS said the few Amateurs in the area presently on 220 mhz. are very pleased with the "new band" and are now ready for their own repeater.

TENNESSEE STATE NEWS

Bob May, K4SE, Reporter

ACROSS THE STATE . . . Bill Moyers, WB4YPO, East Tenn. Freq. Coordinator has just sent a CVRA Membership form to all known Tennessee repeater groups. He reports a high level of interest in the Tennessee-CVRA possible "merger" statewide. Indications are that it will only be a matter of time until unification is realized.

ENGLISH MT . . . A low-power RTTY-only repeater has been coordinated for this site, near Morristown. The frequency will be 144.51-145.11. The new machine will share the location with the existing 13-73 repeater.

JONESBORO . . . The new 99-39 Jonesboro repeater should be fully operational as of this writing. When auto-patch equipped, it is expected to extend phone patching capabilities into parts of Washington County not fully covered by the Johnson City 87-27 machine.

GREENEVILLE . . . The 66-06 Greeneville repeater now operating full time under the call of WA4LYF/R. Also in Greeneville, the frequency of 78-18 has been tentatively coordinated for a local coverage repeater to be put into operation by Lee Crisp, W4ANB, one of the founding fathers of the 10-70 machine.

TAZEWELL, VA . . .A new 6-meter repeater has been coordinated for Tazewell by both CVRA and Tennessee on 52.05-53.05. WA4QKH, the repeater representative is commended for his efforts to insure interstate coordination.

ALL TENN.CLUBS were recipients of complimentary copies of the November CVRA Journal. With the strong interest shown in the State for the CVRA, O.D. Keaton, WA4GLS, ARRL SCM recommended this be done to enable the clubs to learn a little about how the CVRA operates and what it is doing. Any club members wishing to join as an Associate Member and receive the Journal quarterly need only write the Associate Membership chairman and enclose the $3.00 Associate Membership.

TENNESSEE TRI-CITIES AREA NETS:

Bristol, Tuesdays, 8:00 p.m. 07-67 K4ILW/R
Kingsport, Wednesdays, 8:00 p.m. 37-97 WR4AGE
Johnson City, Thursdays, 8:00 p.m. 19-79 WR4AIP

DISTRIBUTION OF REPEATERS BY FREQUENCY

FEBRUARY, 1979

TWO METERS

4.61 /5.21	SAURATOWN MT	NC
	GASTON	SC
4.75 /5.35	BLAND	VA
4.79 /5.39	SAURATOWN MT	NC
4.87 /5.47	LILLINGTON	NC
4.89 /5.49	BLUEFIELD (WVA)	VA
6.01 /6.61	GREENSBORO	NC
	NEW BERN	NC
	GREENVILLE	SC
	MYRTLE BEACH	SC
	BRUMLEY MT	VA
	LYNCHBURG	VA
6.025/6.625	LAURINBURG	NC
	HARRISONBURG	VA
	NEW MARKET	VA
6.04 /6.64	HENDERSONVILLE	NC
	RALEIGH	NC
	WINSTON-SALEM	NC
	SUMTER	SC
	RICHMOND	VA
6.055/6.655	CONCORD/KANNAP.	NC
	ALEXANDRIA	VA
6.07 /6.67	BURLINGTON	NC
	FOREST CITY	NC
	BARREN SPRINGS	VA
	LEXINGTON	VA
	WILLIAMSBURG	VA
6.085/6.685	STATESVILLE	NC
	MCLEAN	VA
	VIENNA	VA
6.10 /6.70	GREENVILLE	SC
	LANCASTER	SC
	SUMMERVILLE	SC
	DAN/WHT.OAK MT	VA
	HIGHLAND SPRNGS	VA
	NORFOLK	VA
6.115/6.715	FAYETTEVILLE	NC
	HERNDON	VA
6.13 /6.73	KNOXVILLE(TN)	NC
	SALISBURY	NC
	WILMINGTON	NC
	N. AUGUSTA	SC
	HAMPTON	VA
	ROANOKE	VA
6.16 /6.76	ASHVL/MT PISGAH	NC
	GREENSBORO	NC
	GRIFTON	NC
	CHARLESTON	SC
	COLUMBIA	SC
	BLUEFIELD (WVA)	VA
	CHARLOTTESVILLE	VA
	FOREST	VA
6.175/6.775	ELIZABETHTON	NC
6.19 /6.79	HIGH POINT	NC
	JOHNSON CTY(TN)	NC
	CHARLESTON	SC
	TOCCOA (GA)	SC
	CHESAPEAKE	VA
	FAIRFAX	VA
6.205/6.805	GASTONIA	NC
6.22 /6.82	DURHAM	NC
	ROARING GAP	NC
	WILMINGTON	NC
	GREENVILLE	SC
	COVINGTON	VA
	WINCHESTER	VA
6.235/6.835	WADESBORO	NC
6.25 /6.85	HICKORY	NC
	REIDSVILLE	NC
	SEVEN SPRINGS	NC
	FLORENCE	SC
	LAURENS	SC
	PORTSMOUTH	VA
6.265/6.865	HIGH POINT	NC
6.28 /6.88	RALEIGH	NC
	SHELBY	NC
	COLUMBIA	SC
	SAVANNAH (GA)	SC
	RICHMOND	VA
	ROANOKE/SALEM	VA
6.295/6.895	WILLIAMSTON	NC
6.31 /6.91	AHOSKIE	NC
	ASHEVILLE	NC
	FAYETTEVILLE	NC
	LEXINGTON	NC
	WHITE HALL	SC
	BLACKSBURG	VA
	FARMVILLE	VA
	ROANOKE	VA
	TYSONS CORNER	VA
6.325/6.925	DANVILLE(DCC)	VA
6.34 /6.94	ASHEVILLE	NC
	AURORA	NC
	BURGAW	NC
	CHARLOTTE	NC
	DURHAM	NC
	JACKSONVILLE	NC
	NAGS HEAD	NC
	CHARLESTON	SC
	COLUMBIA	SC
	GREER	SC
	GALAX	VA
	HAMPTON	VA
	LYNCHBURG	VA
	RICHMOND	VA
	ROANOKE	VA
6.355/6.955	ROCKINGHAM	NC
6.37 /6.97	KINGS MTN	NC
	MT AIRY	NC
	SMITHFIELD	NC
	ANDERSON	SC
	FLORENCE	SC
	SAVANNAH (GA)	SC
	BULL RUN/MANNA.	VA
	STAUNTON	VA
	VIRGINIA BEACH	VA
	VIRGINIA BEACH	VA
6.385/6.985	ALBEMARLE	NC
	ROANOKE	VA
6.40 /7.00	JACKSONVILLE	NC
	MARION	SC
	PICKENS	SC
	SUFFOLK	VA
6.43 /7.03	ERWIN	NC
	YORK CO. C.D.	SC
	BLACKSBURG	VA
6.46 /7.06	CHARLOTTE	NC
	ELIZABETH CITY	NC
	SOUTH BOSTON	VA
6.475/7.075	BURLINGTON	NC
7.30 /7.90	MONROE	NC
7.38 /7.98	DURHAM	NC
7.615/6.015	SUMTER	SC
	FREDRICKSBURG	VA
7.63 /7.03	GREENSBORO	NC
	ROANOKE RAPIDS	NC
	DUBLIN	VA
7.645/7.045	GREENVILLE	SC
7.66 /7.06	MACO	NC
	SUMTER/SHAW	SC
7.675/7.075	GREENVILLE	SC
	CRIMORA	VA
7.69 /7.09	GREENVILLE	NC
	ORANGEBURG	SC
	SPARTANBURG	SC
	BRIARPATCH MT	VA
7.705/7.105	MARION	NC
	EVINGTON	VA
7.72 /7.12	GASTONIA	NC
	GREENSBORO	NC
	ROCKY MOUNT	NC
	ALEXANDRIA	VA
	CULPEPPER	VA
7.735/7.135	ROBBINSVILLE	NC
	CHERAW	SC
7.75 /7.15	MORGANTON	NC
	RALEIGH	NC
	ETTRICK	VA
	TAZEWELL	VA
7.765/7.165	GREENWOOD	SC
	WARRENTON	VA
7.78 /7.18	MT AIRY	NC
	SANFORD	NC
	DORCHESTER	SC
	FT MILL	SC
	DUBLIN	VA
	FORT LEE	VA
7.795/7.195	LAKE TOXAWAY	NC
7.81 /7.21	GASTONIA	NC
	GREENSBORO	NC
	LITTLE MT	SC
	HIGH KNOB	VA
	MCLEAN	VA
	RUSTBURG	VA
7.825/7.225	HILLSBOROUGH	NC
7.84 /7.24	EDEN	NC
	FRANKLIN	NC
	PINE BLUFF	NC
	SHELBY	NC
	COLUMBIA	SC
	SOUTH HILL	VA
	WOODBRIDGE	VA
7.855/7.255	ASHEBORO	NC
7.87 /7.27	BENSON	NC
	GASTONIA	NC
	JOHNSON CTY(TN)	NC
	WAYNESVILLE	NC
	CHARLESTON	SC
	LONG MT	SC
	GUM SPRING	VA
	SALEM	VA
7.885/7.285	MARTINSVILLE	VA
7.90 /7.30	LEXINGTON	NC
	BERRYVILLE	VA
	FRANKLIN	VA
	GRUNDY	VA
7.915/7.315	KERNERSVILLE	NC
	ALEXANDRIA	VA
7.93 /7.33	FAYETTEVILLE	NC
	LENOIR	NC
	COLUMBIA	SC
	N. AUGUSTA	SC
	COLE MT	VA
	KLMNRK/SALUDA	VA
7.945/7.345	SHELBY	NC
	DANVILLE	VA
7.96 /7.36	BOONE	NC
	FRANKLIN	NC
	LUMBERTON	NC
	COLUMBIA	SC
7.975/7.375	BURNSVILLE	NC
	SALEM	VA
7.99 /7.39	AHOSKIE	NC
	CHARLOTTE	NC
	PETERSBURG	VA

NORTH CAROLINA REPEATERS

TWO METERS

AHOSKIE	WR4AFB	146.31	146.91		PA
AHOSKIE	WA4JOK	147.99	147.39	N	C
ALBEMARLE	WR4BBX	146.385	146.985		L
ASHEBORO	WR4AOE	147.855	147.255		PA
ASHEVILLE	WB4DRN	146.31	146.91		A
ASHEVILLE	WA4QCO	146.34	146.94	N	
ASHVL/MT PISGAH	WR4AEV	146.16	146.76		
AURORA	WR4ABQ	146.34	146.94	N	O
BENSON	WR4ARL	147.87	147.27		PA
BOONE	WR4ATQ	147.96	147.36		PA
BURGAW	K4LZY	146.34	146.94		
BURLINGTON	WR4AKY	146.07	146.67		A
BURLINGTON	W4VGZ	146.475	147.075		A
BURNSVILLE	WA4LLR	147.975	147.375	N	P
CHARLOTTE	WR4AEU	146.34	146.94		A
CHARLOTTE	WR4ALO	146.46	147.06	N	A
CHARLOTTE	WR4AWQ	147.99	147.39		
CONCORD/KANNAP.	K4CEB	146.055	146.655		A
DURHAM	WR4AGC	146.22	146.82		
DURHAM	WR4BEK	146.34	146.94		
DURHAM	WR4AJY	147.38	147.98	N	
EDEN	WR4AZX	147.84	147.24		
ELIZABETH CITY	WA4VTX	146.46	147.06		A
ELIZABETHTON	W4DCD	146.175	146.775		P
ERWIN	WR4ALY	146.43	147.03	N	
FAYETTEVILLE	WR4BCA	146.115	146.715	N	
FAYETTEVILLE	WR4ANN	146.31	146.91		A
FAYETTEVILLE	W4LPL	147.93	147.33		
FOREST CITY	WR4AHA	146.07	146.67		A
FRANKLIN	WR4ALD	147.84	147.24		
FRANKLIN	N4AC	147.96	147.36	N	
GASTONIA	WR4BAD	146.205	146.805	N	L
GASTONIA	WR4ATP	147.72	147.12		A
GASTONIA	WR4AXH	147.81	147.21		A
GASTONIA	WD4KGM	147.87	147.27	N	
GREENSBORO	K4SNI	146.01	146.61		A
GREENSBORO	WR4AOD	146.16	146.76		
GREENSBORO	WD4IPZ	147.63	147.03		A
GREENSBORO	WR4ANP	147.72	147.12		EA
GREENSBORO	WR4ANL	147.81	147.21	N	
GREENVILLE	W4GDF	147.69	147.09		A
GRIFTON	WR4ABP	146.16	146.76		
HENDERSONVILLE	WR4ALC	146.04	146.64		
HICKORY	WR4ACM	146.25	146.85		
HIGH POINT	WR4AFV	146.19	146.79		
HIGH POINT	K4AZA	146.265	146.865	N	P
HILLSBOROUGH	WR4AGC	147.825	147.225		PA
JACKSONVILLE	WR4ATW	146.34	146.94		A
JACKSONVILLE	WD4FVO	146.40	147.00		PA
JOHNSON CTY(TN)	WB4CXM	146.19	146.79		
JOHNSON CTY(TN)	WA4DIU	147.87	147.27		A
KERNERSVILLE	WB4RGV	147.915	147.315		
KINGS MTN	WR4AYN	146.37	146.97		
KNOXVILLE(TN)	WR4APU	146.13	146.73		
LAKE TOXAWAY	WR4AGH	147.795	147.195	N	
LAURINBURG	WR4AOX	146.025	146.625		
LENOIR	WR4ARG	147.93	147.33		
LEXINGTON	WR4BDA	146.31	146.91		PA
LEXINGTON	WR4ABX	147.90	147.30		C
LILLINGTON	WA4FKI	144.87	145.47	N	
LUMBERTON	WR4BDQ	147.96	147.36		A
MACO	K4OVA	147.66	147.06		
MARION	WR4BBN	147.705	147.105		PA
MONROE	WR4APY	147.30	147.90	N	
MORGANTON	WR4AQI	147.75	147.15		
MT AIRY	WR4ACJ	146.37	146.97		A
MT AIRY	WR4AHE	147.78	147.18		
NAGS HEAD	WR4AKB	146.34	146.94		PA
NEW BERN	WD4JMS	146.01	146.61		A
PINE BLUFF	WR4BAR	147.84	147.24		
RALEIGH	WR4ACF	146.04	146.64		
RALEIGH	WR4AOE	146.28	146.88		
RALEIGH	WR4AOE	147.75	147.15		PA
REIDSVILLE	K4YFT	146.25	146.85		A
ROANOKE RAPIDS	K4PUV	147.63	147.03		
ROARING GAP	WR4AGS	146.22	146.82		
ROBBINSVILLE	WR4BAN	147.735	147.135		
ROCKINGHAM	WR4	146.355	146.955	N	C
ROCKY MOUNT	WR4ADN	147.72	147.12		A
SALISBURY	WR4AAA	146.13	146.73		PA
SANFORD	WB4EJJ	147.78	147.18		A
SAURATOWN MT	AB4X	144.61	145.21	N	
SAURATOWN MT	WB4SNA	144.79	145.39	N	CL
SEVEN SPRINGS	WR4AEF	146.25	146.85		A
SHELBY	WR4ABF	146.28	146.88		
SHELBY	WR4AWU	147.84	147.24		
SHELBY	WR4ABF	147.945	147.345		A
SMITHFIELD	WR4BBO	146.37	146.97		
STATESVILLE	WR4AZS	146.085	146.685		
WADESBORO	W4USH	146.235	146.835		
WAYNESVILLE	N4SM	147.87	147.27		
WILLIAMSTON	WR4	146.295	146.895	N	P
WILMINGTON	K4OVA	146.13	146.73		
WILMINGTON	WR4AHL	146.22	146.82		
WINSTON-SALEM	WR4ARD	146.04	146.64		A

SIX METERS

CARY	WR4AVP	52.35	53.35		
CHARLOTTE	WA4TPZ	52.07	53.07	N	P
HENDERSONVILLE	WR4ALC	52.01	53.01		O
HICKORY	WR4ACM	52.47	53.47		
HILLSBOROUGH	WB4DBB	52.15	53.15		L
RALEIGH	WR4AOE	52.05	53.05		
RALEIGH	WA4PEN	52.25	53.25		C
ROBBINSVILLE	WA4OBZ	52.15	53.15	N	
SAURATOWN MT	WR4AOW	52.17	53.17		C

220 MHZ

ASHVL/MT PISGAH	WR4AEV	222.34	223.94		
CHARLOTTE	W4YYF	222.22	223.82	N	P
FAYETTEVILLE	WR4ADK	222.42	224.02		
FRANKLIN	N4AC	223.34	224.94	N	C
GIBSONVILLE	WR4BBS	223.22	224.82		
HICKORY	WR4ACM	222.42	224.02		
HIGH POINT	K4AZA	222.32	223.92		
HILLSBOROUGH	WR4AGC	222.34	223.94		
HILLSBOROUGH	WB4DBB	222.50	224.10		L
HILLSBOROUGH	WB4DBB	223.34	224.94		P
LOCUST	WR4BBA	222.40	224.00		
MOCKSVILLE	WB4SNA	222.54	224.14	N	P
RALEIGH	WA4PEN	223.04	224.64		
SALISBURY	WR4AAA	223.16	224.76		
SAURATOWN MT	WR4AOW	223.28	224.88		
STATESVILLE	WR4	222.70	224.30	N	P
WINSTON-SALEM	WR4ARD	223.10	224.70		R

450 MHZ

ASHEVILLE	WR4ALE	449.90	445.90	N	C
BURLINGTON	WR4AKY	448.25	447.25		VC
CHARLOTTE	WR4ALO	449.85	444.85	N	
CONCORD/KANNAP.	WA4UPO	449.65	444.65	N	C
DENVER	WR4	447.75	443.75	N	P
DURHAM	WR4	449.00	444.00	N	P
GRAHAM	WR4	439.25	427.25	N	PV
HIGH POINT	WR4ADR	447.90	442.90		
HILLSBOROUGH	WR4AGC	449.10	444.10		PA
HILLSBOROUGH	WB4DBB	449.35	444.35		
LEXINGTON	WR4	448.31	443.31	N	P
LILLINGTON	WR4	448.10	443.10	N	P
MOYOCK	WR4BBP	447.10	444.10		C
SALISBURY	WR4AAA	449.70	444.70		P
SAURATOWN MT	WR4AOW	448.00	443.00		

REPEATER SYMBOLS

N	NON Member CVRA	L	Linked
A	Autopatch	C	Under Construction
PA	Private Autopatch	P	Proposed Repeater
EA	Emergency Autopatch	O	Off Air Temporarily
T	Tone Access	V	Television
M	T-MARC Repeater	R	RTTY

Articles of Incorporation and By-Laws

of the

CAROLINAS-VIRGINIA REPEATER ASSOCIATION

As Amended by the
Board of Directors
January 18, 1979

(Please remove this section from your Journal and keep)

CARCLINAS-VIRGINIA REPEATER ASSOCIATICN, INC.
ARTICLES OF ASSOCIATION

Be it known that we, the subscribers, do hereby associate ourselves as a body politic and corporate pursuant to the statutes laws of the State of North Carolina regulating the formation and organization of corporations without capital stock and the following are our Articles of Association.

ARTICLE 1: NAME

The name of our corporation shall be the "CAROLINAS-VIRGINIA REPEATER ASSOCIATION, INCORPORATED". (Hereinafter referred to as the Association). Our corporation commenced its corporate existence as the North Carolina FM Repeater Association, Inc. when its Articles of Association were approved by the Secretary of the State of North Carolina on August 19, 1971. The original By-Laws were subscribed by W. R. Sims, K4RUQ, W. D. Harris, W4BUZ, and F. L. Warford, K4AZA. The corporation expanded its area of interest in November 1973, to include the three-state area of North Carolina, South Carolina, and Virginia. The name of the "Carolinas-Virginia Repeater Association" was adopted at that time. In July 1976, a formal boundary in the northern part of Virginia was established with "The Middle Atlantic Repeater Council" and its description was added to the By-Laws. Also, the districts of the Association were re-established and the number reduced from nine to three. The affairs of the corporation have been continuously administered by a Board of Directors selected by the membership since its original formation on March 14, 1971.

ARTICLE 2: PURPOSE

The purposes for which our corporation is formed are the following:

a. To serve as a voluntary coordinating body for VHF/UHF repeater and simplex frequencies for the Amateur Radio Service.

b. To promote the exchange of information concerning repeater installations and operation.

c. Offer guidance and assistance in establishing repeaters.

d. To provide a unified voice for FM and repeater interests in the geographical area represented by the Association.

e. To advance the general interest and welfare of amateur radio as a public service.

No part of the assets or income of our corporation shall be the property of the members or any of them, but such assets and income shall be devoted exclusively to the purposes herein set forth.

ARTICLE 3: OFFICES

The principal office of the Association shall be located at 3101 Julian Avenue, Raleigh, NC 27604. The registered office of the Association, required by law to be maintained in the State of North Carolina, will be as prescribed by the Board of Directors.

ARTICLE 4: DIRECTORS

The affairs of the Association shall be governed by a Board consisting of Directors who shall be elected for terms of two years by the Repeater Representatives eligible to vote. Directors shall be elected for terms beginning on odd-numbered years. Election of Directors shall be by mail vote in accordance with the rules and regulations prescribed in the By-Laws. Directors shall be elected to represent repeaters within specific geographical areas as may from time to time be prescribed by the By-Laws.

ARTICLE 5: BOARD MEETINGS

The Board shall meet twice each year at times as provided by the By-Laws. The first meeting shall be called the Annual meeting and the second shall be called the Second meeting. Special meetings of the Board shall be called by the President upon written request of at least one-half of the membership of the Board. Written or printed notice stating the time and place of the meeting shall be delivered not less than five, nor more than thirty days before the date thereof, either personally or by mail, by or at the direction of the President.

ARTICLE 6: VICE-DIRECTORS

At the time of the election of each Director there shall also be elected a Vice-Director who shall have power of succession to the office of Director. No person shall be eligible for the office of Vice-Director who does not possess the qualifications for Director.

ARTICLE 7: BOARD OF DIRECTORS' VACANCY

A vacancy in the Board of Directors shall be deemed to occur upon the death, resignation, or refusal to act of any Director. Upon the occurance of such vacancy, the Secretary shall proclaim it and thereafter the duties of the Director shall be assumed by the Vice-Director, and the Vice-Director shall hold the office of Director for the remainder of the term for which he was elected Vice-Director. Should the office of Vice-Director be vacant, the vacancy shall be filled by appointment by the President. The Vice-Director shall also serve as Director at any meeting of the Board of Directors which the Director is unable to attend.

ARTICLE 8: OFFICERS

The officers of the Association shall be a President, Vice-President,

Secretary and Treasurer, who shall be elected by the eligible Repeater Representatives. Elections shall be conducted by mail for terms beginning on even-numbered years, in accordance with the rules and regulations prescribed in the By-Laws.

No person shall be eligible for the office of Director or Vice-Director who is not a Representative of a member repeater within the appropriate geographical area which will be represented. All Repeater Representatives of member repeaters shall be eligible for the office of President, Vice-President, Secretary and Treasurer. No person shall serve concurrently as a Director, President, or Vice-President.

Should a vacancy occur in the office of President, the Vice-President shall assume the duties of President for the remainder of the term for which he was elected Vice-President. Should a vacancy occur in the office of Vice-President, Secretary or Treasurer, the vacancy shall be filled by appointment of the President.

ARTICLE 9: AMENDMENTS AND MODIFICATIONS

These Articles and By-Laws may be amended by two-thirds vote of all Directors. Notice of the proposed amendment shall have been placed in the mail to each Director at least 30 days in advance of the vote.

ARTICLE 10: MEMBERSHIP

The voting membership of the Association shall be composed of Representatives from eligible Amateur Radio Repeater groups or individuals who own repeaters. To be eligible for membership, the group or individual must sponsor a repeater which consistently serves a significant area of one or more of the Association districts delineated in the By-Laws. The repeater may be open for general amateur use, or closed for restricted use. Applications for membership shall be submitted to the Chairman of the Repeater Membership Committee for acceptance into membership. The decision of the Chairman may be superceeded by the Board of Directors.

Upon filing for membership, two individuals shall be named as Repeater Representatives. The Trustee of the repeater license or licensee shall name these representatives, and may change them by giving the Repeater Membership Chairman a thirty-day notice. The Repeater Representatives shall each have one vote in the conduct of business within their district.

An organization or individual may join the Association prior to actually placing a repeater into service, but it does not achieve voting status until service begins. If a repeater ceases operation for a continuous three-month period, voting rights cease until operation resumes.

Any person interested in amateur radio shall be eligible to join the Asssociation as an Associate Member. An Associate Member shall be eligible to serve in any appointed capacity within the Association, but may not be a candidate for an elective office.

MEMBERSHIP PROVISIONS

1. The appropriate membership committee Chairman or his designee shall notify all members of the expiration of their membership not less than 30 days in advance thereof. Members in arrears shall be carried on the rolls for 90 days, but if they have not renewed their memberships by that date, they shall be dropped.

2. The dues of a Member Repeater Group and of an Associate Member as well as appropriate payment schedules shall be determined by the Board of Directors.

GENERAL PROVISIONS AS TO OFFICERS AND DIRECTORS

3. Every officer, Director and Vice-Director shall serve and continue in office until his successor shall have been elected and qualified.

4. All officers, Directors, Vice-Directors, and Appointees shall serve without compensation in any form. This shall not preclude the reimbursement of administrative expenses included in the approved budget, or others specifically approved by the Board of Directors.

DIRECTORS

5. The President, Vice-President, Secretary and Treasurer shall possess all the rights and duties of Directors save the right to vote and the right to participate in the call of a special meeting of the Board, however, the President shall be required to vote on any matter as to which a tie is found to exist.

6. The Director is the primary representative of the Association within his district. He is supported by a Vice-Director, three Assistant Directors, and other Repeater Representatives or Associate Members appointed to assist in special assignments to adequately cover his district. He maintains contact with all Repeater Representatives in his district and actively solicits leads on individuals or clubs interested in installing a repeater. He also maintains contact with repeaters who may not be members of the Association to minimize conflicts which may arise. He maintains contact with other Directors in the districts adjoining his, and also with representatives of other repeater Associations or repeater groups that are not in the Association districts. The Director is a member of the Association's Frequency Coordinating Committee, which is headed by a Chairman appointed by the President. The Director advises the Chairman of potential problem areas regarding frequency recommendations. He must therefore be fully knowledgeable of the coverage areas of repeaters in his district and of their future plans. He attends meetings of the

Board of Directors and serves as the "sounding board" for ideas and problems concerning repeaters and VHF/UHF interests in his district. He actively solicits repeater groups to join the Association and encourages both owners and users to cooperate with the Association in providing a unified voice for the geographical area represented by the Association. The Director keeps the "Repeater Journal" Editor supplied with information from his district so as to keep all levels of the membership informed of activities within.

7. The Vice-Director maintains close contact with the Director concerning matters of repeater memterships and actively solicits Association memterships, both Repeater and Associate. He works with the Associate Membership Chairman and the Repeater Membership Chairman to frequently review the status of membership levels in his district.

ELECTIONS

8. On any date not later than noon of the first day of September of an election year (even-numbered years), the President shall appoint a nominating committee within each district. Each nominating committee shall consist of three Repeater Representatives, one having been appointed as Chairman. The committee shall nominate one Repeater Representative from their district each to the offices of Director and Vice-Director, and submit the names of the Candidates to the Secretary no later than noon, September 20. The Secretary shall inform the Repeater Representatives within each district of the nominations supplied by the committee no later than September 24. Additional nominations for either post shall be submitted by acquiring the signatures of three Repeater Representatives within the district in question. All nominations shall be to the Secretary no later than, noon October 8. The Board of Directors shall delete the name of any candidate who may be ineligible for election, and the name of any who may withdraw by written communication. The remaining names shall be listed on a ballot in alphabetical order. If there be but one eligible nominee the Board of Directors shall declare him elected without balloting. If there be more than one eligible nominee, no later than October 10, the Secretary shall send by mail to every Repeater Representative, on record as of September 1, in each district in which voting is necessary, a ballot listing the candidates in his district, and a return envelope, soliciting a vote for one name for each post listed.

9. The Board of Directors shall appoint a Committee of Tellers, composed of three Repeater Representatives, to certify the results of the balloting. Ballots to be counted shall reach the Secretary not later than noon on October 25. No outer envelopes marked as containing ballots shall be opened until the meeting of the Committee of Tellers held for the purpose of counting the ballots. The Committee of Tellers shall meet not later than noon, November 1, and in the presence of each other, shall open the envelopes

containing the ballots and shall count the votes, after first eliminating the ballot of anyone disqualified from voting. They shall forthwith prepare and sign in the name of the Board of Directors a report of the results of the vote, declaring duly elected as new Directors and Vice-Directors the candidates in each district receiving the greatest number of votes therein.

10. The ballots and results shall be turned over to the Secretary who shall notify the newly elected parties.

11. The terms of all Directors and Vice-Directors shall begin at noon on the first day of January of the year after that in which they are elected.

MEETINGS

12. The Annual Meeting of the Board of Directors shall be held in the first quarter of the year and the Second Meeting in August or September of each year. The meeting locations and times shall be established by the President, at various locations within the Association districts. Announcements shall be made in the February and August issues of the "Repeater Journal" and attendance shall be open to any Repeater Representative.

13. A majority of the members of the Board of Directors or of any committee shall constitute a quorum at any meeting of the Board or Committee.

14. On questions of order and procedure not otherwise determined by these By-Laws, the provisions of the current edition of "Roberts Rules of Order" shall prevail.

DISTRICTS

15. In accordance with the provisions of Article 4 of the Articles of Association, the following districts are established:

    a. North Carolina: the autonomous state of North Carolina.

    b. South Carolina: the autonomous state of South Carolina.

    c. Virginia: the area within the state of Virginia south of a line formed by the 38-degree parallel of latitude extending from the Atlantic Ocean west to U.S. Route 33, then following Route 33 to the West Virginia state line.

16. Each district shall be sub-divided into three representative sections to facilitate control and insure districtwide communications between Repeater Representatives, Associate Members, and the Director and Vice-Director. The counties included in each section are enumerated as attachments to these By-Laws and may be modified upon action by the appropriate

Director as requirements dictate. The Director shall appoint an Assistant Director in each section to serve as the Coordinator of activities relating to Association areas of interest. The Assistant Director may be a Repeater Representative or an Associate Member. The appointment shall be for one year, extendable.

16.1 Alterations to the boundaries of existing Association districts may be made from time to time by amending section 15 of these By-Laws in accordance with the provisions of Article 9.

16.2 An Association district may be deleted from time to time by amending these By-Laws in accordance with the provisions of Article 9. Any offices that the Director or Vice-Director of the deleted district may have held shall be then declared vacant and shall be filled in accordance with the normal procedures defined for those offices.

16.3 All Member Repeaters which may no longer meet the membership requirements as a result of the alteration or deletion of a district shall immediately lose their voting rights. However, their membership may continue until the expiration of the current term.

16.4 The following procedure shall be used in order to create a new Association district:

a. ten or more repeaters within the proposed district shall apply for full membership in the Association conditional upon acceptance of the new district.

b. the representatives of ten of more of these conditional Member Repeaters shall submit a petition to the President requesting the creation of a new Association district. This petition shall delineate the geographical area to be represented and the proposed district name. The petition shall be in the form of an amendment to section 15 of these By-Laws.

c. upon receipt of this petition and written confirmation from the Repeater Membership Committee that the petitioners are in fact valid conditional Repeater Representatives, the President shall place the petition before the Board of Directors in accordance with the provisions of Article 9.

d. upon approval of the petition by the Board of Directors the new district shall immediatiely be deemed part of the Asscciation and all conditional repeater memberships which fulfill the membership requirements shall immediately be accorded full voting membership. Upon disapproval of the petition, monies received from the conditional applicants which do not meet the membership requirements shall be returned.

e. the offices of Director and Vice-Director for the new district shall be filled in accordance with the procedures prescribed in these By-Laws with the exception that the dates shall be altered to commence the procedure on the first day of the month followin the creation of the new district. The term of these offices shall commence immediately upon notification of the newly-elected parties by the Secretary.

OFFICERS

17. The President shall preside over all meetings of the Board of Directors. He shall represent the Association in its relationship with the public and shall be the official spokesman of the Board of Directors in regard to all matters of Association policy.

18. In the absence or disability of the President, The Vice-President shall preside at the meetings of the Board of Directors and in general act in his stead. He shall be "ex officio" a member of the Repeater Membership Committee and the Associate Membership Committee.

19. The Secretary shall record the proceedings of all meetings of the Board of Directors. He shall promptly furnish copies of the minutes of these meetings to all officers and members of the Board, and shall publish highlights of the meetings in the "Repeater Journal". He shall be responsible for the maintenance of the corporate status of the Association and the filing of all reports and certificates which may be required of the Association under the corporate laws of the State of North Carolina.

20. The Treasurer shall be the recipient of all monies of the Association and shall deposit the same in the name of the Association in a depository approved by the Board of Directors. He shall pay all obligations known by him to be proper and authorized. He shall make a report at the meetings of the Board of Directors, and shall attend meetings of the Board. He shall prepare an annual Budget for approval by the Board at its Annual Meeting. He shall be responsible for the filing of all reports and certificates which may be required of the Association under the tax laws of the State of North Carolina and the United States of America.

21. On any date, not later than noon of the first day of September of an election year (odd-numbered years), the President shall appoint a nominating committee to prepare a slate of nominees for the four elective offices of President, Vice-President, Secretary and Treasurer. The nominating committee shall consist of three Repeater Representatives, one having been appointed as Chairman. The committee shall nominate one Repeater Representative as the candidate for each of the four offices, and submit the names of the candidates to the Secretary no later than noon, September 20. The Secretary shall inform all the Directors of the nominations

no later than September 24. Additional nominations for any office shall be submitted by acquiring the signatures of five Repeater Representatives of the Association. All nominations shall be to the Secretary no later than noon, October 8. The Board of Directors shall delete the name of any candidate who may be ineligible for election, and the name of any who may withdraw by written communication. The remaining names shall be listed on the ballot in alphabetical order. If there be but one eligible nominee for any office, the Board of Directors shall declare him elected without balloting. If there be more than one eligible nominee for any office, no later than October 10, the Secretary shall send by mail to every eligible Repeater Representative a ballot listing the candidates and a return envelope, soliciting a vote for one name for each office listed.

22. The Board of Directors shall appoint a Committee of Tellers, composed of three Repeater Representatives to certify the results of the balloting. Ballots to be counted shall reach the Secretary not later than noon on October 25. No outer envelopes marked as containing ballots shall be opened until the meeting of the Committee of Tellers held for the purpose of counting the ballots. The Committee of Tellers shall meet no later than noon, November 1, and in the presence of each other, shall open the envelopes contianing the ballots and shall count the votes, after first eliminating the ballot of anyone disqualified from voting. They shall forthwith prepare and sign in the name of the Board of Directors a report of the results of the vote, declaring the new officers duly elected.

23. The ballots and the results shall be turned over to the Secretary who shall notify the newly elected parties.

24. The terms of all Officers shall begin at noon on the first day of January of the year after that in which they are elected.

STANDING COMMITTEES

25. The following Standing Committees are established:

FCC Liason, Frequency Coordination, Repeater Membership, Associate Membership, Publications, and Technical Advisory.

26. Committee Membership and Chairmen appointments shall be made by the President for terms of one year.

27. The Frequency Coordinating Committee has a standing membership composed of the Directors plus a Chairman appointed by the President. The Chairman may or may not be a Director. The committee shall:

a. maintain current records on frequencies in use, or planned for use in the Association districts plus applicable surrounding areas.

b. advise potential repeater owners of frequencies that are available for use, and work with the applicant on final selection.

c. maintain contact with the Area Frequency Coordinators in areas adjoining the Association districts regarding frequencies in use or planned.

28. The FCC Liason Committee shall consist of two members, one appointed as Chairman. The Committee shall:

a. keep up to date on all Commission Rules and Regulations and advise the President and Board of Directors on all matters that may influence repeaters and/or general VHF/UHF operations.

b. prepare comments for the Association to the FCC on all rules changes, and prepare petitions for changes on behalf of the Association.

c. advise on matters concerning general amateur operating procedures and practices.

29. The Repeater Membership Committee has a standing membership of the Vice-Directors plus a Chairman appointed by the President. The Chairman may or may not be a Vice-Director. The committee shall:

a. solicit all repeater Trustees, clubs, or groups that maintain an existing repeater, or plan to install a repeater, to encourage them to join the Association.

b. maintain an accurate roster of the repeater representatives and the physical descriptions of the repeaters.

c. maintain membership records, prepare renewal notices, receive payments of dues and forward monies collected to the Treasurer.

30. The Associate Membership Committee shall consist of five members, one appointed Chairman. The Committee shall:

a. work with the officers, Directors, Vice-Directors and Repeater Representatives to expand the membership levels of Associate Members.

b. maintain membership records, prepare renewal notices, receive payments of dues and forward monies received to the Treasurer.

c. maintain current total mailing list for the Association and handle "Repeater Journal" mailings.

31. The Publications Committee shall consist of an Editor, Assistant

Editor, Advertising Editor, and Technical Editor, each appointed by the President. The Committee shall:

a. publish the "Repeater Journal", the official newsletter of the Association, at least quarterly.

b. solicit newsworthy information from various Officers, Directors, and members in general to insure the membership is kept current on all VHF/UHF activities in the Association districts.

c. Provide each Repeater Representative and Associate Member with a copy of each issue of the "Repeater Journal".

d. provide promotional and educational literature to the membership as applicable.

22. The Technical Advisory Committee shall consist of five members, one appointed as Chairman. The Committee shall:

a. advise the Association on appropriate standardization matters such as band plans, tone access frequencies, autopatch congifurations, etc.

b. provide assistance in interference situations between or among repeater stations and their users.

c. conduct evaluations into new and improved equipment and/or configurations related to improving the overall operation of repeaters.

33. All standing committees shall have the power of original recommendations to the Board of Directors.

REFERENCES

34. Without changing their import, the Secretary may from to time to time, on notice to the Board of Directors, renumber these By-Laws so as to serve the purpose of ready reference. References in these By-Laws to Articles shall be corrected, when necessary, by the Secretary to conform to renumbered Articles.

END

These Articles of Association and By-Laws were approved by the Board of Directors of the Carolinas-Virginia Repeater Association at the Board meeting held on August 31, 1974, in Shelby, NC.

The Articles and By-laws were modified to reflect a reduction in the number of Districts from nine to three by mail vote of all Directors on July 31, 1976.

These Articles and By-Laws were amended to provide election of Directors, Vice-Directors, and Officers by Repeater Representatives rather than by Directors by means of a telephone conference-call on December 10, 1977.

These Articles and By-Laws were amended at the Annual meeting held on January 7, 1979 to:

a. change from one vote per Member Repeater to one vote per Repeater Representative.

b. change references to "states" into "districts".

c. move approval of new Member Repeaters from the Board of Directors to the Chairman of the Repeater Membership Committee.

d. remove the specification of dues amounts from the By-Laws and place this function under the Board of Directors.

e. add paragraphs to the By-Laws to provide for the alteration, deletion, and addition of Association districts.

- Published as a Service to the Membership, by the CVRA Journal

- Printed by Golden Triangle Printing Co. Greensboro, N.C.

CVRA RECOGNIZED BAND PLANS

6 METER BANDPLAN

33 Repeater Channels

52.01 - 53.01
52.03 - 53.03
52.05 - 53.05
52.07 - 53.07
52.13 - 53.13
52.15 - 53.13
52.15 - 53.15
52.17 - 53.17
52.23 - 53.23
52.25 - 53.25
52.27 - 53.27
52.33 - 53.33
52.35 - 53.35
52.37 - 53.37
52.39 - 53.39
52.41 - 53.41
52.43 - 53.43
52.45 - 53.45
52.47 - 53.47
52.55 - 53.55
52.57 - 53.57
52.63 - 53.63
52.65 - 53.65
52.67 - 53.67
52.73 - 53.73
52.75 - 53.75
52.77 - 53.77
52.83 - 53.83
52.85 - 53.85
52.87 - 53.87
52.93 - 53.93
52.95 - 53.95
52.97 - 53.97
52.99 - 53.99

SIMPLEX
51.51
51.53 etc.
to 51.99
52.29
52.49
52.51
52.525

RADIO CONTROL
53.1
53.2
53.4
53.5
53.6
53.7
53.8

CVRA 2-METER BANDPLAN

Repeater Channels

144.51 - 145.11
144.53 - 145.13
144.55 - 145.15
144.57 - 145.17
144.59 - 145.19
144.61 - 145.21
144.63 - 145.23
144.65 - 145.25
144.67 - 145.27
144.69 - 145.29
144.71 - 145.31
144.73 - 145.33
144.75 - 145.35
144.77 - 145.37
144.79 - 145.39
144.81 - 145.41
144.83 - 145.43
144.85 - 145.45
144.87 - 145.47
144.89 - 145.49

146.010 - 146.610
146.025 - 146.625
146.040 - 146.640
146.055 - 146.655
146.070 - 146.670
146.085 - 146.685
146.100 - 146.700
146.115 - 146.715
146.130 - 146.730
146.145 - 146.745
146.160 - 146.760
146.175 - 146.775
146.190 - 146.790
146.205 - 146.805
146.220 - 146.820
146.235 - 146.835
146.250 - 146.850
146.265 - 146.865
146.280 - 146.880
146.295 - 146.895
146.310 -146.910
146.325 - 146.925
146.340 - 146.940
146.355 - 146.955
146.370 - 146.970
146.385 - 146.985
146.400 - 147.000
146.415 - 147.015
146.430 - 147.030
146.445 - 147.045

146.460 - 147.060
146.475 - 147.075
147.600 - 147.000
147.615 - 147.015
147.630 - 147.030
147.645 - 147.045
147.660 - 147.060
147.675 - 147.075
147.690 - 147.090
147.705 - 147.105
147.720 - 147.120
147.735 - 147.135
147.750 - 147.150
147.765 - 147.165
147.780 - 147.180
147.795 - 147.195
147.810 - 147.210
147.825 - 147.225
147.840 - 147.240
147.855 - 147.255
147.870 - 147.270
147.885 - 147.285
147.900 - 147.300
147.915 - 147.315
147.930 - 147.330
147.945 - 147.345
147.960 - 147.360
147.975 - 147.375
147.990 - 147.390

144.0 to 144.5 SSB
144.9 to 145.1 SSB
145.5 to 146.0 SSB

Satellite
145.85 to 145.975

SIMPLEX FM

146.49
146.52
146.55
146.58

147.42
147.45
147.48
147.51
147.54
147.57

CVRA 220 MHZ BANDPLAN

55 Repeater Channels

222.30 - 223.90
222.32 - 223.92
222.34 - 223.94
222.36 - 223.96
222.38 - 223.98

222.40 - 224.00
222.42 - 224.02
222.44 - 224.04
222.46 - 224.06
222.48 - 224.08

222.50 - 224.10
222.52 - 224.12
222.54 - 224.14
222.56 - 224.16
222.58 - 224.18

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222.86 - 224.46
222.88 - 224.48

222.90 - 224.50
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222.96 - 224.56
222.98 - 224.58

223.00 - 224.60
223.02 - 224.62
223.04 - 224.64
223.06 - 224.66
223.08 - 224.68

223.10 - 224.70
223.12 - 224.72
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223.16 - 224.76
223.18 - 224.78

223.20 - 224.80
223.22 - 224.82

223.24 - 224.84
223.26 - 224.86
223.28 - 224.88

223.30 - 224.90
223.32 - 224.92
223.34 - 224.94
223.36 - 224.96
223.38 - 224.98

SIMPLEX
24 Channels

223.40
223.42
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223.58
223.60
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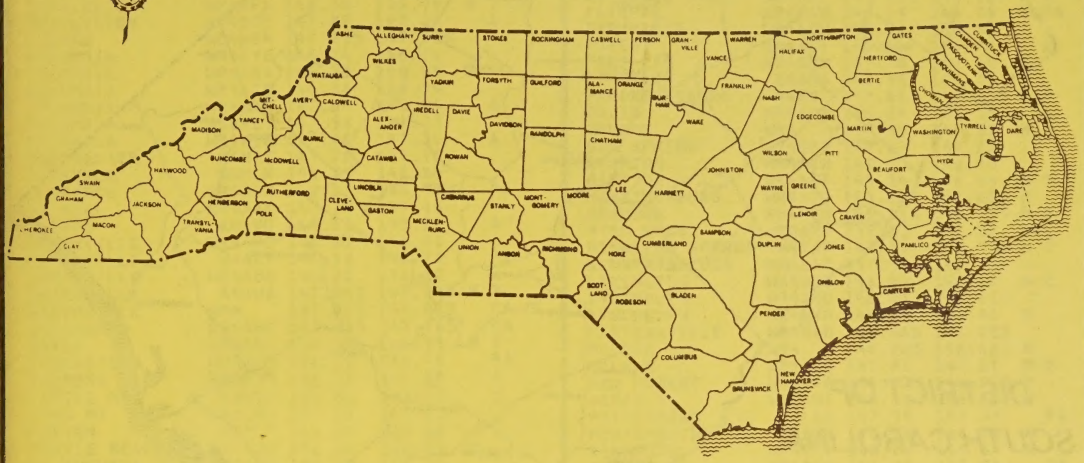
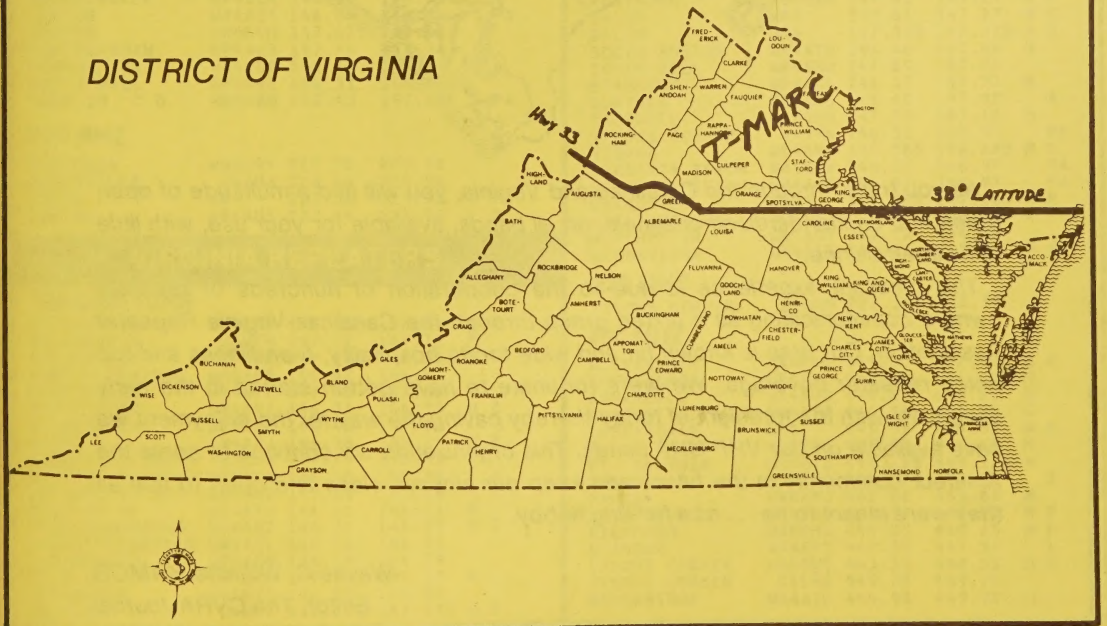
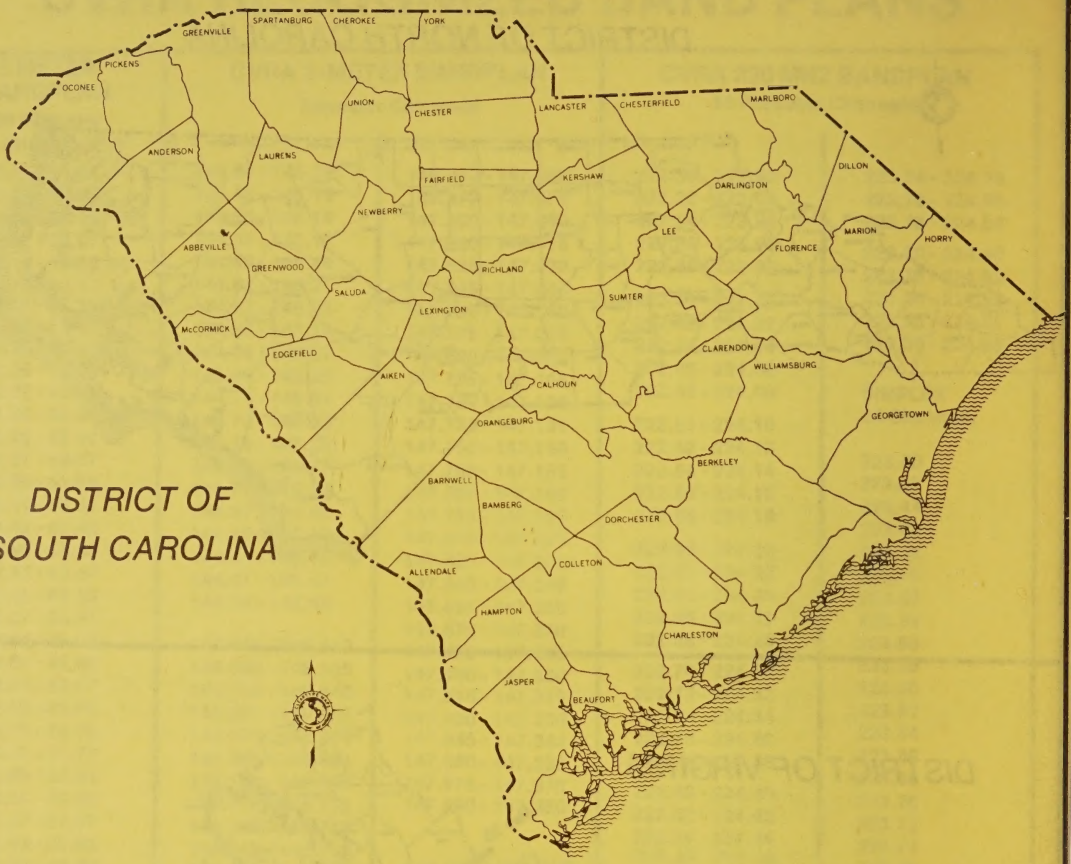
223.88

DISTRICT OF NORTH CAROLINA



DISTRICT OF VIRGINIA





DISTRICT OF SOUTH CAROLINA

As you travel through the Carolinas and Virginia, you will find a multitude of open repeaters, on standardized channels, on all bands, available for your use, with little or no interference.

This pleasant experience is due to the cooperation of hundreds of repeater owners communicating as a united group through the Carolinas-Virginia Repeater Association. Our area is known far and wide for its hospitality, friendliness and top notch repeater coverage. We were fortunate to have gotten started in the early seventies, with the foresight of today-thereby paving the way for the enjoyment we have available on our VHF-UHF bands. This organization will continue to serve the Amateur community in the future and keep our airways clean and open to use as they were meant to be . . . as a fulfilling hobby.

-Wayne C. Williams, K4MOB
Editor, The CVRA Journal

SOUTH CAROLINA REPEATERS

TWO METERS

ANDERSON	WR4AIO	146.37	146.97		PA
CHARLESTON	WR4ASP	146.16	146.76	N	A
CHARLESTON	WR4AUV	146.19	146.79		
CHARLESTON	WR4AFX	146.34	146.94	N	T
CHARLESTON	WR4BCP	147.87	147.27		A
CHERAW	WD4HEH	147.735	147.135		
COLUMBIA	WR4AYE	146.16	146.76		
COLUMBIA	WR4ABA	146.28	146.88	N	
COLUMBIA	WR4ACD	146.34	146.94		
COLUMBIA	WR4AYE	147.84	147.24		A
COLUMBIA	WB4VLY	147.93	147.33		
COLUMBIA	WR4ASE	147.96	147.36		A
DORCHESTER	W4NAT	147.78	147.18		
FLORENCE	W4ULH	146.25	146.85		
FLORENCE	WR4AGM	146.37	146.97		PA
FT MILL	WR4ABK	147.78	147.18		
GASTON	K4AVU	144.61	145.21		A
GREENVILLE	WR4ADG	146.01	146.61		
GREENVILLE	W4AZT	146.10	146.70		PA
GREENVILLE	WR4ADG	146.22	146.82		A
GREENVILLE	K4AWB	147.645	147.045	N	P
GREENVILLE	WR4	147.675	147.075		PA
GREENWOOD	WR4AUE	147.765	147.165		PA
GREER	WR4ABG	146.34	146.94	N	T
LANCASTER	WC4AAW	146.10	146.70		PA
LAURENS	WR4AZM	146.25	146.85		A
LITTLE MT	K4AVU	147.81	147.21		C
LONG MT	WA4JRJ	147.87	147.27		
MARION	W4YLT	146.40	147.00		
MYRTLE BEACH	WR4AXC	146.01	146.61	N	
N. AUGUSTA	WR4ABB	146.13	146.73		
N. AUGUSTA	WR4ALS	147.93	147.33	N	
ORANGEBURG	WR4AQY	147.69	147.09		PA
PICKENS	WR4ADP	146.40	147.00		
SAVANNAH (GA)	W4HBB	146.28	146.88		
SAVANNAH (GA)	W4HBB	146.37	146.97		A
SPARTANBURG	WR4BDT	147.69	147.09		PA
SUMMERVILLE	WR4BCH	146.10	146.70		A
SUMTER	WR4AOI	146.04	146.64		PA
SUMTER	WR4BCM	147.615	146.015		
SUMTER/SHAW	WR4AUS	147.66	147.06		
TOCCOA (GA)	WA4LUC	146.19	146.79		
WHITE HALL	WR4AQL	146.31	146.91		
YORK CO. C.D.	WC4ABD	146.43	147.03		PA

220 MHZ

COLUMBIA	WB4URY	222.30	223.90		
GREENVILLE	W4FHJ	222.46	224.06		
GREER	WR4	222.38	223.98	N	P
SUMTER	WR4AUS	222.34	223.94		C

VIRGINIA REPEATERS

TWO METERS

ALEXANDRIA	WR4AXB	146.055	146.665	M	
ALEXANDRIA	W4HFH	147.72	147.12	M	
ALEXANDRIA	WR4ATZ	147.915	147.315	M	
BARREN SPRINGS	WR4AFQ	146.07	146.67		
BERRYVILLE	WR4APE	147.90	147.30		
BLACKSBURG	WR4AXT	146.31	146.91	N	C
BLACKSBURG	WA4YRJ	146.43	147.03		
BLAND	N4AZJ	144.75	145.35	N	P
BLUEFIELD (WVA)	K8BHG	144.89	145.49		
BLUEFIELD (WVA)	WR4AXS	146.16	146.76		A
BRIARPATCH MT	WR4AHR	147.69	147.09		L
BRUMLEY MT	WR4ATJ	146.01	146.61	N	
BULL RUN/MANNA.	WR4ADZ	146.37	146.97	N	T
CHARLOTTESVILLE	WR4ATL	146.16	146.76		
CHESAPEAKE	WR4ACN	146.19	146.79		
COLE MT	WR4BCI	147.93	147.33	N	
COVINGTON	WA4HTI	146.22	146.82		
CRIMORA	W4NPT	147.675	147.075	N	P
CULPEPPER	WR4BCS	147.72	147.12	M	
DAN/WHT.OAK MT	WR4BDN	146.10	146.70		
DANVILLE	WR4AHG	147.945	147.345	N	
DANVILLE(DCC)	WB4GJG	146.325	146.925		
DUBLIN	WR4AFQ	147.63	147.03	N	P
DUBLIN	WR4AFQ	147.78	147.18	N	
ETTRICK	K4SII	147.75	147.15	N	P
EVINGTON	WB4JBJ	147.705	147.105	N	R
FAIRFAX	WR4AAD	146.19	146.79	M	PA
FARMVILLE	WR4ASW	146.31	146.91		
FOREST	WR4ADY	146.16	146.76		A
FORT LEE	WR4BDX	147.78	147.18	N	
FRANKLIN	K4SPS	147.90	147.30		
FREDRICKSBURG	N4QD	147.615	147.015	N	P
GALAX	WR4AHR	146.34	146.94		C
GRUNDY	WR4	147.90	147.30	N	A
GUM SPRING	WR4BBI	147.87	147.27		
HAMPTON	WR4ALW	146.13	146.73		
HAMPTON	WR4AFT	146.34	146.94	N	T
HARRISONBURG	WR4ATG	146.025	146.625	N	
HERNDON	KH6HGG	146.115	146.715	M	P
HIGH KNOB	K4AXO	147.81	147.21	N	C
HIGHLAND SPRNGS	W4TJF	146.10	146.70	N	C
KLMNRK/SALUDA	WA4UAF	147.93	147.33		
LEXINGTON	WA4WBD	146.07	146.67	N	C
LYNCHBURG	WR4AXO	146.01	146.61		
LYNCHBURG	WD4EXH	146.34	146.94	N	
MARTINSVILLE	WB4HAD	147.885	147.285		
MCLEAN	WR4	146.085	146.685	N	
MCLEAN	WR4APC	147.81	147.21	M	R
NEW MARKET	WR4ATG	146.025	146.625	M	
NORFOLK	WR4ANT	146.10	146.70	N	
PETERSBURG	W4LGG	147.99	147.39		PA
PORTSMOUTH	K4LMY	146.25	146.85	N	
RICHMOND	WB4QEY	146.04	146.64	N	
RICHMOND	WR4BBZ	146.28	146.88		PA
RICHMOND	WR4ADI	146.34	146.94		T
ROANOKE	WR4AMQ	146.13	146.73	N	C
ROANOKE	WD4GOE	146.31	146.91	N	
ROANOKE	WR4AHT	146.34	146.94	N	
ROANOKE	WR4AFY	146.385	146.985		
ROANOKE/SALEM	WR4AFE	146.28	146.88		L
RUSTBURG	WD4EXH	147.81	147.21	N	P
SALEM	WR4	147.87	147.27	N	C
SALEM	WR4	147.975	147.375	N	C
SOUTH BOSTON	WR4AYU	146.46	147.06	N	
SOUTH HILL	WR4BBU	147.84	147.24		
STAUNTON	WR4ACL	146.37	147.97	N	
SUFFOLK	WR4AKS	146.40	147.00		A
TAZEWELL	WA4QKH	147.75	147.15	N	
TYSONS CORNER	K4VYN	146.31	146.91		PA
VIENNA	WR4AVK	146.085	146.685	M	C
VIRGINIA BEACH	WA4KXV	146.37	146.97		PA
VIRGINIA BEACH	WR4AAC	146.37	146.97		PA
WARRENTON	AB4N	147.765	147.165	N	P
WILLIAMSBURG	W4NTG	146.07	146.67	N	
WINCHESTER	WR4AGT	146.22	146.82		
WOODBRIDGE	WR4AII	147.84	147.24	M	A

220 MHZ

TYSONS CORNER	K4GCM	222.34	223.94		

450 MHZ

ALEXANDRIA	WR4AAG	439.25	427.25	M	V
ALEXANDRIA	WR4ANC	449.60	444.60	M	
ANNANDALE	WR4AQG	444.85	449.85	M	
CHARLOTTESVILLE	WR4AYG	444.25	449.25	N	
CHESAPEAKE	WR4	449.95	444.95	N	P
FALLS CHURCH	WB8CRK	449.45	444.45	M	
FT. BELVOIR	WR4ATJ	444.125	449.125	N	
LYNCHBURG	WB4IUS	449.50	444.50		T
PARIS	WR4ANJ	444.80	449.80	N	
PETERSBURG	WR4BBU	449.50	444.50	N	P
RICHMOND	WA4ONG	449.85	444.85	N	P
ROANOKE	WR4AFY	442.50	447.50		L
TYSONS CORNER	WB6GUS	443.50	448.50	M	P
TYSONS CORNER	K4LHB	444.75	449.75		
WOODBRIDGE	WR4AII	444.90	449.90	M	

TENNESSEE REPEATERS

TWO METERS

ALAMO	WR4API	147.135	147.735
ALCOA	WR4APM	146.25	146.85
ALTAMONT	WR4AWN	146.37	146.97
BRISTOL	WR4AFZ	146.28	146.88
BRISTOL	WR4AXQ	147.60	147.00
BROWNSVILLE	WR4ASI	146.655	146.055
CHATTANOGA	K4CMY	146.01	146.61
CHATTANOGA	WB4UDX	146.19	146.79
CHATTANOGA	WR4AFS	147.60	147.00
CLARKSVILLE	WR4AOD	147.60	147.00
CLEVELAND	WR4AQV	147.78	147.18
COLUMBIA	WR4AIX	147.72	147.12
COOKEVILLE	WR4ANW	146.07	146.67
COOKEVILLE	WB4QSJ	147.81	147.21
COVINGTON	WR4BBC	147.93	147.33
CROSSVILLE	WR4	147.93	147.33
DAYTON	N4QU	147.99	147.39
FAYETTEVILLE	WR4BAQ	147.63	147.03
GALLITIN	WR4BCX	147.84	147.24
GREENVILLE	WR4AHP	146.10	146.70
GREENVILLE	WA4LYF	147.66	147.06
HENDERSONVILLE	W4KKO	144.89	145.49
HENDERSONVILLE	WR4BCX	147.63	147.03
HOHENWALD	WR4	147.93	147.33
JACKSON	WR4AQN	147.81	147.21
JOHNSON CTY*	WB4CXM	146.19	146.79
JOHNSON CTY*	WA4DIU	147.87	147.27
KINGSPORT	WR4ADO	146.16	146.76
KINGSPORT	WR4AGE	146.37	146.97
KNOXVILLE	WR4AIA	146.01	146.61
KNOXVILLE	WR4ADF	146.34	146.94
KNOXVILLE	WR4AHF	146.40	147.54
KNOXVILLE*	WR4APU	146.13	146.73
LAFOLLETTE	WR4AKW	146.07	146.67
LEBANON	WR4BBM	146.13	146.73
MADISON	WR4AKN	146.04	146.64
MANCHESTER	WR4ACI	146.10	146.70
MEDINA	K4BEZ	146.37	146.97
MEMPHIS	WR4	144.89	145.49
MEMPHIS	WR4AHK	146.01	147.51
MEMPHIS	WR4AYR	146.04	146.64
MEMPHIS	WR4AOG	146.10	146.70
MEMPHIS	WR4AGR	146.13	146.73
MEMPHIS	WR4ABS	146.19	147.51
MEMPHIS	WR4AHD	146.22	146.82
MEMPHIS	WR4AZK	146.25	146.85
MEMPHIS	WA4ETE	146.28	146.88
MEMPHIS	WR4AEX	146.34	146.94
MEMPHIS	WR4BLJ	146.40	147.00
MEMPHIS	WR4AXF	146.46	147.06
MEMPHIS	WR4BCU	147.63	147.03
MEMPHIS	WR4AWT	147.67	147.09
MEMPHIS	WB4DAZ	147.72	147.12
MEMPHIS	WR5AII	147.75	147.15
MEMPHIS	WR4	147.78	147.17
MEMPHIS	WR4AZC	147.87	147.27
MEMPHIS	WR4ASF	147.90	147.30
MEMPHIS	WR4ATA	147.96	147.36
MEMPHIS	WR4ASR	147.99	147.39
MORRISTOWN	WR4	147.63	147.03
NASHVILLE	WR4AWV	146.01	146.61
NASHVILLE	WR4AKN	146.07	146.67
NASHVILLE	WR4ACS	146.16	146.76
NASHVILLE	WR4AFA	146.19	146.79
NASHVILLE	WR4ABV	146.25	146.85
NASHVILLE	WR4ACY	146.28	146.88
NASHVILLE	WR4AGX	146.34	146.94
NASHVILLE	AI4P	147.615	147.015
NASHVILLE	WR4AUX	147.75	147.15
NASHVILLE	WB4HFS	147.78	147.18
NASHVILLE	WR4ZSA	147.90	147.30
NASHVILLE	WR4BLT	147.945	147.345
NASHVILLE	WR4AKN	147.96	147.36
NASHVILLE	WR4	147.975	147.375
NEWBERN	AA4HF	146.745	146.145
OAK RIDGE	WR4ADQ	144.85	145.45
OAK RIDGE	WR4AGJ	146.22	146.82
OAK RIDGE	WR4AGL	146.28	146.88
OAK RIDGE	K4EAJ	147.72	147.12
PARIS	WR4AYM	147.96	147.36
SAVANNAH	WA4HGN	146.31	146.91
SHELBYVILLE	WR4AQM	147.66	147.06
SHORT MT.	WR4AZF	146.31	146.91
SPARTA	W4BSA	147.69	147.09
SPRINGFIELD	WR4AGH	147.63	147.03
UNION CITY	WR4AUQ	146.10	146.70
UNION CITY	K4MVE	146.655	146.055
WAVERLY	WR4AYB	146.685	146.085
WINCHESTER	WR4AFH	146.22	146.82

(Index Ctsy: David Wolfe, WA4VVX, Jackson Tenn.)

MARYLAND REPEATERS

TWO METERS

ASHTON	WR3AFT	146.40	147.00
BALTIMORE	WR3AFM	146.07	146.67
BALTIMORE	WR3ACR	147.63	147.03
BALTIMORE	WR3AIU	147.885	147.285
BEL AIR	K3GUX	146.175	146.775
CAMBRIDGE	WR3ADY	146.445	147.045
CHELTENHAM	WR3AGF	147.75	147.15
CHEVERLY	WR3ABC	146.01	146.61
COLUMBIA	K3CUJ	147.735	147.135
COLUMBIA	WR3AGP	147.99	147.39
CUMBERLAND	WR3AGI	146.28	146.88
DAVIDSONVILLE	WR3AJP	147.705	147.105
E. BALTIMORE	WR3AFI	147.84	147.24
FREDERICK	WR3ABL	146.13	146.73
FREDERICK	WR3ADR	147.66	147.06
FROSTBURG	WR3AKV	147.99	147.39
GAITHERSBURG	WR3AKP	146.355	146.955
GREENBELT	WR3ABB	146.28	146.88
HAGERSTOWN	WR3ABT	146.34	146.94
HAVRE DE GRACE	WR3ADH	146.25	146.85
JESSUP	WR3ADZ	146.16	146.76
LEXINGTON PARK	WR3ACP	146.04	146.64
LEXINGTON PARK	W3NET	146.265	146.865
N. BALTIMORE	WA3KOK	146.34	146.94
POTOMAC	WR3ACF	147.87	147.27
ROCKVILLE	WR3ABM	146.04	146.64
SALISBURY	WR3ABS	146.22	146.82
SALISBURY	WA3YII	146.385	146.985
SEVERNA PARK	WR3ACL	146.10	146.70
SILVER SPRING	WR3ABU	146.25	146.85
SILVER SPRING	WR3AEO	147.78	147.18
W. BALTIMORE	WR3AGS	147.945	147.345
WASHINGTON	WR3AGX	147.96	147.36
WHEATON	WR3AFD	147.69	147.09

DELEWARE REPEATERS

TWO METERS

DELMAR	WR3ABS	146.22	146.82
DOVER	WR3ABP	146.38	146.97
NEWARK	WR3ACV	146.10	146.70
NEWARK	WR3AGQ	146.355	146.955
WILMINGTON	WR3ABA	146.13	146.73
WILMINGTON	WR3AGR	147.75	147.15
WILMINGTON	WA3QLS	147.825	147.225

(Index Ctsy: Gary Hendrickson, W3DTN, T-MARC, Severn, Md.)

W. VIRGINIA REPEATERS

TWO METERS

ALDERSON	WR8AKZ	146.13	146.73
BECKLEY	WR8AKZ	146.25	146.85
BECKLEY	WR8ACO	146.34	146.94
BLUEFIELD*	K8BHG	144.89	145.49
BLUEFIELD*	WR4AXS	146.16	146.76
BRIDGEPORT	WR8ALC	147.72	147.12
BUCKHANNON	K8WYH	146.25	146.85
CHARLESTON	WR8AER	146.22	146.82
CHARLESTON	WR8ACD	146.28	146.88
COTTAGEVILLE	WR8AKV	146.31	146.91
ELKINS	WR8AOH	146.04	146.64
FAIRMONT	W8JM	146.31	146.91
HUNTINGTON	WR8AFE	146.04	146.64
HUNTINGTON	WR8AGH	146.16	146.76
LOGAN	WR8ADD	146.37	146.97
MCMECHEN	WSNUX	146.31	146.91
MORGANTOWN	WR8ABM	146.16	146.76
MULLINS	WR8AKX	147.63	147.03
NEW MARTINSVLLE	WR8ABY	146.34	146.94
PARKERSBURG	WR8ACJ	146.37	146.97
PARKERSBURG	WR8	147.96	147.36
PARSONS	WR8AGU	146.13	146.73
PENNSBORO	WR8	147.90	147.30
PRINCETON	WB8NRK	146.46	147.06
RAVENSWOOD	WR8	146.07	146.67
RICHWOOD	K8VKB	146.34	149.34
ST ALBANS	WR8AJS	146.40	147.00
TERRA ALTA	WR8AEY	147.60	147.00
WEIRTON	WR8AQA	146.34	146.94
WHEELING	WR8AEW	146.16	146.76

(Index Ctsy: Steve Rice, K8SR, Dunbar, W. Virginia)

GEORGIA REPEATERS

TWO METERS

ALBANY	WR4ADM	146.10	146.70
ALBANY	WR4ANB	146.22	146.82
AMERICUS	WR4AQH	147.87	147.27
ATHENS	WR4ABJ	146.13	146.73
ATLANTA	WR4ABE	146.04	146.64
ATLANTA	WR4AAE	146.22	146.82
ATLANTA	WR4ABC	146.37	146.97
ATLANTA	WR4ARK	146.40	147.00
ATLANTA	WR4	147.255	147.855
ATLANTA GA TECH	WR4AFR	147.66	147.06
AUGUSTA	WR4AGD	146.34	146.94
AUGUSTA	WR4ALS	147.72	147.12
BALDWIN	WD4NHW	147.78	147.18
BRUNSWICK	WR4	146.13	146.73
BUFORD	WR4BBV	147.87	147.27
CARROLTON	W4FWD	146.04	146.64
CEDARTOWN	WR4AZU	147.72	147.12
COHUTTA	WR4AXM	146.46	147.06
COLUMBUS	W4YYE	146.13	146.73
COLUMBUS-RTTY	K4ACH	144.77	145.37
CONYERS	WB4JDM	147.81	147.21
COVINGTON	WA4ASI	146.925	146.325
CUMMING	WR4AOC	147.75	147.15
DALLAS	WR4AHM	146.25	146.85
DUBLIN	WR4AWI	147.96	147.36
EATONTON	WR4ACX	146.10	146.70
FORSYTHE	WR4AQA	147.315	147.915
GAINSVILLE	WR4AEK	146.07	146.67
GRIFFIN	WR4AIV	146.31	146.91
GRIFFIN	WR4AEA	146.43	147.43
HAPEVILLE	WR4ABN	147.63	146.03
HARTWELL	WA4NBP	146.895	146.295
IRWINTON	WB4NFG	147.84	147.24
ISABELLA	W4MM	146.13	146.73
JESUP	WR4	146.07	146.67
JONESBORO	WR4AED	144.85	145.45
LAGRANGE	WR4AVJ	147.93	147.33
LYONS	WR4APZ	146.22	146.82
MABLETON	WB4BMC	146.13	146.73
MACON	WR4	144.83	145.43
MACON	W4BKM	146.06	146.66
MACON	K4ICT	146.46	147.46
MILLEDGEVILLE	WR4AUM	147.66	147.06
MOULTRIE	WR4	146.19	146.79
NEWNAN	WR4AIH	146.19	146.79
QUITMAN	WR4BBH	146.28	146.88
RINGOLD	WR4	146.715	146.115
ROME	WR4ADH	146.34	146.94
ROME	WR4	146.685	146.085
ROSWELL	WR4	144.87	145.47
SANDY SPRINGS	WR4	144.75	145.35
SAVANNAH	WR4AVO	146.10	146.70
SAVANNAH	WR4AVO	147.63	147.03
SAVANNAH*	W4HBB	146.28	146.88
SAVANNAH*	W4HBB	146.37	146.97
SNELLVILLE	WR4AZW	147.075	147.675
STONE MTN	W4BOC	146.16	146.76
STONE MTN-RTTY	WR4BAG	147.105	147.705
SVR CRK/MT ALTO	WR4BSG	147.90	147.30
SWAINSBORO	WR4APR	146.16	146.76
SWEAT MTN	WR4AMN	146.28	146.88
SWEAT MTN	WR4AOT	147.94	147.34
THOMASTON	WR4AVA	147.99	147.39
THOMASVILLE	WR4	147.66	147.06
TIFTON	K4QT	147.285	147.885
TOCCOA*	WA4LUC	146.19	146.79
VALDOSTA	WA4SMH	146.16	146.76
VALDOSTA	WA4SMH	147.135	147.735
VIENNA	WA4RUS	146.34	146.94
WARNER ROBBINS	WR4AFD	146.25	146.85
WARNER ROBBINS	WR4AZP	147.90	147.30
WAYCROSS	WR4AMK	146.34	146.94
WAYCROSS	WR4	146.805	146.205
WRIGHTSVILLE	WR4RVB	146.34	146.94

(Index Ctsy: David Nulty, N4ATI, Fort Benning, Ga.)

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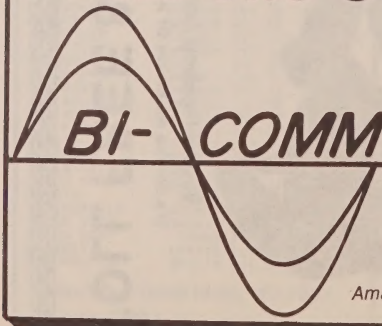

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INTERVIEW WITH A YL: WHY I BECAME A HAM . . . OR, "HAS ANYBODY SEEN THE CAT LATELY?"

- By Mike Williams, WA4JIY AND Norma Williams, WA4MZG

OM: I know you have your ham ticket now. Maybe our readers would like to hear what made you decide to become a ham after being married to one for 14 years. Why?

YL: To get out of the kitchen.

OM: What do you mean?

YL: Well, I wanted to spend less time in the kitchen. I'd been around hams a lot and I noticed how they like to come home from work, choke their dinner down and go sit in front of the radio all night.

OM: How did that work out?

YL: Not too well. My husband claimed he couldn't even boil water and my son couldn't cook anything but chicken noodle soup. I hate chicken noodle soup.

OM: Well, somebody had to do the cooking. What is it that you don't like about the kitchen?

YL: First off, my stove doesn't even have a digital readout. Also, I was denied a new microwave oven because I was told it would cause QRM on 20 meters.

OM: What else prompted you to get your ticket?

YL; I became tired of going to hamfests, playing bingo and being dragged around as anonymous baggage. I wanted my own plastic nameplate. Also, I was having trouble with the terminology. My husband called one night to say he was bringing home a Yaesu. I asked if he was staying for dinner and began searching for the chopsticks and the rice.

OM: Did you have much difficulty studying for the exam?

YL: Some. I kept asking what was a Colpitts oscillator and no one would answer with a simple "yes" or "no".

OM: Did you get help from other hams in your studies?

YL: To a certain extent. When I would ask for a layman's definition of basics such as 'frequency', I would hear, "Uh, well, you know . . ." while they frantically searched for the manual only to read aloud the same vague unenlightening statement.

OM: What about the code?

YL: I hated code. I was even known to do housework to avoid studying code. But since there was no way around it, I attacked it just to get it behind me. I spent so much time with a cassette tape recorder and an ear plug that my son started to look at me funny. He wanted to know if he too would have a piece of spaghetti growing out of his ear when he got older.

OM: What other sacrifices did you make to become a ham?

YL: Well, it seems I lost an entire winter and spring. The poor cat disappeared one day. She probably started going next door to beg for food. When I would lamely beg off attendance at the womans club, the PTA, and my art class with excuses of studying for a 'Ham exam', I was met with dubious glances of disbelief that laid doubt on the credibility of my excuses. Also, the 9 a.m. coffee klatch refused to come to my house because they couldn't make themselves heard over the noise of the Wayne Green tapes. They also mumbled about the unwashed coffee cups which had taken on a greenish hue.

OM: Did all that time you spent studying put a strain on your family life?

YL: Sure did. One day the cat came home, looking like skin and bones, and crawled into my lap. I guess I'd been drinking too much coffee and my nerves were on edge because I screamed at the cat, accusing her of making too much noise while she was licking her fur. She disappeared again. Also, my son asked how old you had to be to join the Foreign Legion or Hell's Angels - whichever came first.

OM; How long did this go on?

YL: Quite a while. I remember that I started in the fall and by the middle of summer with my advanced license behind me, I found that the nation had a new President, my son had grown all his front teeth and had a tattoo, and the cat had had two litters of kittens by the tom next door. The vacuum cleaner had rusted from disuse, there was a brownish green growth hanging from all the corners in the house, and I was having difficulty adjusting to life without an earplug.

OM: Were you nervous when you took your exam?

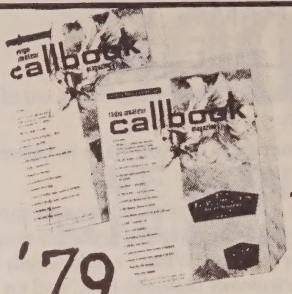
YL: Some, but more so after I saw those guys fidgetting around taking deep breaths and nervously chewing gum while muttering about the FCC tape that had so many echoes that it was no wonder so many failed the code.

OM: After you got your Novice and your Technician, what made you decide to get your General?

YL: One day I overheard a man say that a woman didn't really need a General Class license.

OM: Well, what about getting your Advanced?

Continued on Page 32



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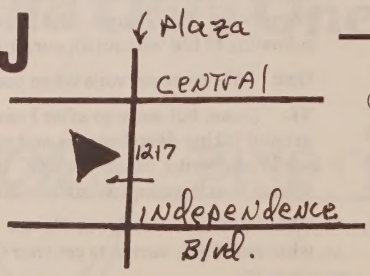

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Thoughts On Autopatch

(Continued from Page 1)

Whatever way the groups chose, there is still some confusion among other groups as to just what is "legal".

We had the occasion to chat with a respected FCC engineer and we asked him just how did the FCC ionterpret this idea of an autopatch and third party traffic. The FCC says that when you key up the auto-patch on the repeater - the machine immediately ceases being a repeater. "Liken the repeater to your low band rig," the Engineer said, "When you patch a telephone into your transmitter and broadcast the 3rd party conversation for someone to receive, this is exactly what the repeater, which is now an amateur station is doing."

On the other hand, when you transmit to the repeater, your voice is fed directly to the telephone interconnect. Again there is no repeating. The FCC defines a repeater as an Amateur station with the purpose of retransmitting other Amateur signals. In the case of the Autopatch, no repeating is done.

This is the basis the Commission requires a Control Operator to be monitoring the Autopatch call and even though Section 97.79D doesn't actually mention a repeater or autopatch, they do make it clear that a live control operator must be present when broadcasting 3rd party traffic, whether it be from your transmitter at your home, or whether through a repeater autopatch system.

This the questions arise, can a person in an automobile take control of the repeater as an Authorized Control Station to make an Autopatch call, the answer is yes, IF the person has Radio Control on a frequency other then the Repeaters input frequency that he can shut down the machine, abofe 220.5 mhz. Radio control is covered under Section 97.88E.

The FCC figures the only time an autopatch can be used on a repeater without a control operator is in an extreme EMERGENCY basis. Then, some device must be on the autopatch system to prevent the system from being used for purposes other than emergencies, such as special codes, known only to club members. Logging by tape is still required for the un-controlled emergency calls.

Clubs who might desire to utilize the club membership method of control operators, with all having radio control in their cars also remember the requirements of control operators as to logging, etc. Also a correct systems diagram and copies of ALL control operators licences available to every member, at the repeater and in the repeater master log.

The CVRA has received many inquiries as to just what to do since the clarification came out concerning Section 97.79D. We cannot advise just what your particular situation would require, we can only remind you that the Commission is aware that many repeater owners in some areas continued their autopatch systems, and "ignored" the handwriting on the wall.

The easy way to remain legal if you wish to continue your autopatch system is to return to live monitoring with Authorized control stations utilizing Wire (telephone) Control. It was that way for years and we got by. If there are times you cannot utilize live monitors, such as after midnight until dawn, have a setup to shut down the autopatch and return to automatic control during those hours.

The commission is not out to get us. They reminded us we were going wrong, and certainly have given us ample time to decide what we want to do . . . so lets decide and make the best of the situation.

-Wayne C. Williams, Editor

CAROLINA MESSENGER NEWSLETTER CEASES PUBLICATION

The December issue of "The Carolina Messenger" contained a front page message from its editor, R.H. Miller, W4OCX, stating that this was the last issue of the newsletter he would publish after two years operation.

The Newsletter carried traffic reports, net registers and other interesting items concerning traffic handling, leaning heavily with ARRL SCM information.

INTERVIEW WITH A YL

Continued from Page 29

YL: That's the license my husband has. I knew if he passed it that I could. After all, he still says megacycles instead of megahertz.

OM: What does your husband think of your getting your license?

YL: He was okay until I told him I had hired a maid to come in three times a week so I would have more time to work DX. Of course, he uses my license as an excuse to buy more ham gear.

OM: Well, what does the future hold for you now?

YL: I've thought about trying for my Extra Class license. I've brought home license study guildes three different times, but they mysteriously keep disappearing. My husband swears he doesn't know anything about them.

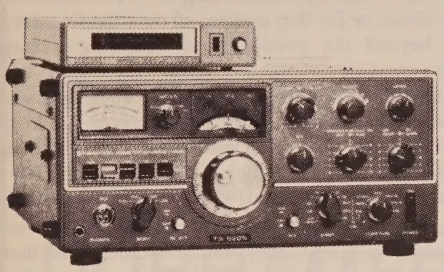
OM: What does he say about your getting your Extra?

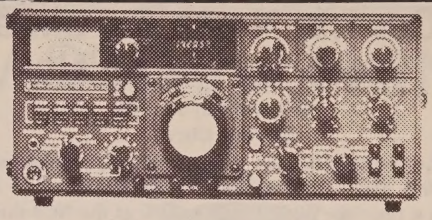
YL: He keeps mumbling that that would be grounds for divorce.

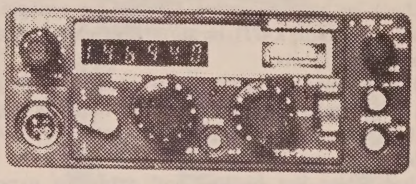
OM: Are you going ahead with it?

YL: Well . . . I wouldn't have to share the rig anymore then, would I?

KENWOOD







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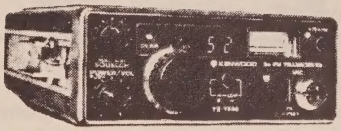

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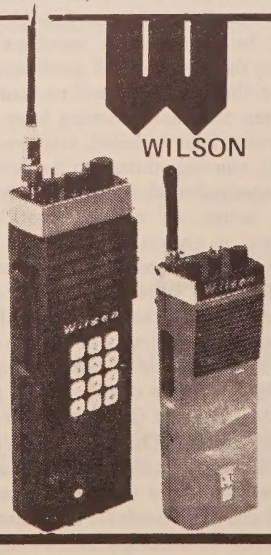

Central North Carolina Weather Watch Net

- By Bert Bailey W4FMN,
EC Wake Cty, N.C.

The Central Carolina Weather Watch Net kicked off at 1900 hours EST on Wednesday 22 November 1978 with a flourish. With Phil WA4BKP at the NCS throne, 77 check-ins were recorded. Not bad for a virgin effort. Danny's repeater K4ITL on 28/88 Raleigh was used with outstanding results.

Over 30 counties were represented, including Robeson, Edgecombe, Forsyth, and Granville. It was gratifying to see so many hams anxious to get into the weather watch business. Phil, the NCS is a newcomer to the Tarheel state but he has had extensive experience running a similar net in Tennessee.

An immediate problem arose with the large number of check-ins however. So it was decided to assign each check-in a number beginning with those in the highest alphabetical order, county-wise. The legality of this was debated and it was the consensus that if the NCS called a number, that station would answer with his callsign, thus keeping peace with Fox Charley Charley.

With kudos to another Phil, WD4MKY this time, a computer readout is being made after each net, with the added numbers recorded and copies there being sent to each NCS every week. So if each station will remember his assigned number, that will expedite the calling of the net.

It is expected that the weather transmitter broadcasting on 162.55 MHz at Raleigh-Durham Airport (RDU) will be in operation sometime during January. So, since there are lots of good buys on the market these days, the early birds will no doubt save some dinero by buying now and listening later. Most models have a warning light included, triggered by an audio tone at RDU, alerting stations to the fact that weather reports are now solicited. And that is when our net would swing into action. Of course, what happens during "duty hours" is always a moot point. However, stations of those who work odd shifts, retired personnel, and school stations like WB4TOP, Wake Technical Institute, and W4ATC, NCSU could probably fill in till 1700 hours or so when the "infantry" will "fill the foxholes."

The net was not created overnight. It began as an idea months ago. Due credit must be given to Russ WA4VLE of Durham who QSOd with Mr. John R. McClain, the Meterologist-in-Charge at the Weather Forecast Office at RDU; and planted the seeds of a weather reporting system involving the ham community. Meetings were held and plans made for implementation. Mike WD4TQD and Bert W4FMN planted a Ringo vertical just beneath the radar dome at RDU; it works DX all by itself. Propagation checks were made and all systems appeared A-1 OK, gung-ho and hubba-hubba. A short meeting one night at RDU and enthusiastic NCSs were selected. The next Wednesday became history. Backing up Phil WA4BKP, who may have to depart the State on occasion, are alternates NCSs Russ, WA4VLE, and Mike WD4TQD. Also, we expect to man the coax at RDU with the rigs and bodies of Phil the WD4MKY, Wilbur the WD4RDT, and Mike the N4AYJ (in turn that is - not all at once). As one can readily deduce, you have an excellent chance of joining the charter group of Weather Watchers if your name begins with Phil or Mike.

In due course, it is hoped that other parts of the Old North State that have their own Meterologists or Weather officers will adopt a similar setup and eventually the entire State will be covered in any case of severe weather. As soon as I get the names of these personnel from Mr. McClain here in Raleigh I will give them to the appropriate ECs and the SCM.

Much work remains to be done but at least the Raleigh and Durham clubs have started the ball rolling. Hopefully, we hams can save a few Tarheels and property. 73.

AN ENCOUNTER OF

Continued from Page 15

So much for that, but the alarming thought came to my mind; what if this were happening in other instances in the Carolinas, or for that matter, all over the Country. It is not beyond the possibility of becoming a major problem.

Let us suppose that thousands of these rigs were dumped on the market, with no reference as to the proper or lawful use of the equipment. We might very well be faced with a situation out of control and out of the reach of the under-staffed and overworked F.C.C.

A recent publication from the Chicago area made reference to circumstances similar to encounter that I had. They cited problems that amateurs in southern California are faced with, whereby Mexicans are using 220 gear as business radios just south of the border.

If you are as dedicated to amateur radio as I am, and don't wish to see the day when frustration and anguish forces you off the air at least off the VHF bands, then follow a few simple suggestions.

I suggest we stick closer together, becoming alert to any circumstances that appear unusual, I investigate any and all valid suspicions collect any facts or information and report to the F.C.C. anything that would expedite an investigation.

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MORE INFO TO COME

WESTERN CAROLINA ARS NEWS NOTES OF INTEREST

- By Jim Hornaday, WB4DRN

New officers of Western Carolina Amateur Radio Society took office in December. President - Jim Hornaday, WB4DRN; Vice-President - John Humphrey, WA4LWO; Secretary - Patricia York, KA4BZC; Treasurer - Frank Hill, WB4JMG; Directors - Stan Ward, WD4AVY; Jack Grafing, WD4IJT.

Club meetings are first Thursday of each month at the Health and Social Services Bldg. in downtown Asheville at 7:30 PM. dinner meeting the second Monday at the Western Steer on Patton Ave. in West Asheville at 7:00 PM. Visitors are welcome at all meetings.

Asheville "Autumnfest" for 1979 will be October 13 (Saturday) in the Asheville Civic Center - same location as 1978. Jack Grafing, WD4IJT, is Chairman. For preliminary information as to dealer booths, flea market space or whatever write Jack at Box 1488, Asheville, N.C. 28802. More later.

Bumcombe County Civil Preparedness Coordinator Jerry VeHaun, WA4GTT, called a simulated emergency exercise Thursday, Dec. 14 and asked for communications assistance from Larry York, WB4PLA, County Radio Officer & EC. WA4VNV, N4ARZ, W4FUI, WB4DRN, WB4JMG, WB4RPG, WD4HQW, WA4QVG and WD4IJT responded and most took an active part. This exercise was called during the week rather than on a week-end as in the past to see how many people would be available during a normal work day.

Howard Steelman, WA4QCO, is working on a 34/94 machine to be located near Ben Lippen School in Asheville.

GASTON ARS IS KEEPING BUSY THROUGH THE YEAR

- By Bill Martin, K4AFU

The Gaston County ARS (Gastonia, N.C.) has been quite active over the past few months. New club officers for 1979 have been elected. They are: Pat Patterson, W4MWL, President; Mike Jackson, N4AYO, V.P.; John Wallace, K4JDD, Treas.; Shirley Bynum, WD4PJX, Sec.

The new directors are Bill Martin, K4AFU, Terry Isenhour, WA40P0 and Jack Lucas, W4AOJ.

The Gaston County club will be sponsoring a one-day hamfest at Karyae Park in Gastonia, Sunday May 6th. Final plans are being firmed up for this event.

During the holidays past, the club set up radio stations at Gaston Mall to send Christmas Greeting for the public. The response was very good and the club received some good newspaper publicity for their effort in the Gastonia Gazette.

Gastonia now has four two-meter repeaters on the air. The 81-21 owned by Mack Johnson, K4IFD located at the home of Alvin Robinson, K4NOQ and is equipped with Autopatch.

The Club's 72-12 machine has been having some problems at the end of the year but were being corrected. This machine also has autopatch. George May, WD4KGM owns an 87-27 repeater located in downtown Gastonia and provides good city coverage.

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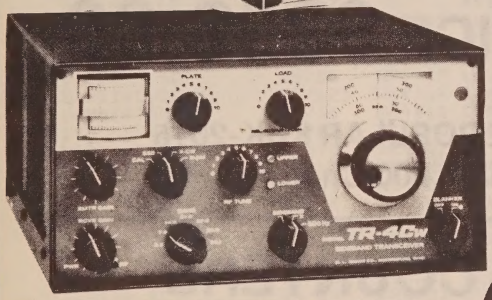

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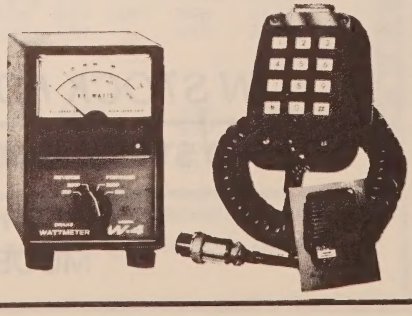

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CATAWBA COUNTY NC	82/82		CATAWBA COUNTY RACES NET	MON	1900
CHARLOTTE NC	34/94	WR4AEU	METROLINA 2-METER EMERG. NET	DAILY	2100
CHERAW SC	735/135	WD4HEH	CHESTERFIELD COUNTY ARS NET	TUE	2030
DANVILLE VA	10/70	WR4BDN	LAST CAPITOL SERVICE NET	TTHSN	2030
DORCHESTER SC	78/18	W4NAT	DORCHESTER AREC/RACES NET	1ST M	
DURHAM NC	34/94	WR4BEK	TRIANGLE RADIO ALERT NET	DAILY	2030
DURHAM NC	34/94	WR4BEK	POSSUM TROT NET	MF	0630
FAYETTEVILLE NC	31/91	WR4ANN	POSSUM TROT NET	MF	0630
FAYETTEVILLE NC	31/91	WR4ANN	CAPE FEAR ARS NET	DAILY	1900
FLORENCE SC	37/97	WR4AGM	FLORENCE 2-METER NET	MON	2000
GREENSBORO NC	16/76	WR4AOD	CVRA INFORMATION NET	WED	2100
GREENSBORO NC	72/12	WR4ANP	GUILFORD COUNTY EMERG. NET	THUR	2100
GREENSBORO NC	01/61	K4SNI	PIEDMONT TFC. & TRAINING NET	MWF	2030
GREENVILLE NC	52/52		BRIGHTLEAF ARS NET	TUE	2100
GREENVILLE SC	01/61	WR4ADG	BLUE RIDGE ARPSC NET	TUE	2100
GREENWOOD SC	765/165	WR4AEU	ABBEVILLE-GREENWOOD EMERG. NET	TUE	2200
GRIFTON NC	16/76	WR4ABP	ENC EMERGENCY NET	THU	2000
LAURENS SC	25/85	WR4AZM	LAURENS CITY ARES NET	MF	2030
LAURINBURG NC	025/625	WR4AOX	SAND HILLS EMERGENCY NET	DAILY	1930
LUMBERTON NC	96/36	WR4BDQ	LUMBERTON ARC NET	MF	2030
LYNCHBURG VA	01/61	WR4AXO	LYNCHBURG TWO METER FM NET	TUE	1900
MORGANTON NC	75/15	WR4AQI	W. PIEDMONT VHF NET	WED	2100
MYRTLE BEACH SC	01/61	WR4AXC	GRAND STRAND 2-METER NET	WED	2100
ORANGEBURG SC	69/09	WR4AQY	VHF NET	TUE	1900
RALEIGH NC	04/64	WR4ACF	RARS NET	MTTHF	2000
REIDSVILLE NC	25/85	K4YFT	ROCKINGHAM CTY. ARC NET	TUE	2100
ROANOKE VA	385/985	WR4AFY	ROANOKE VALLEY ARC NET	WED	2000
ROCKY MOUNT NC	71/12	WR4ADN	ROCKY MOUNT ARC	THU	2030
SALISBURY NC	13/73	WR4AAA	CENT. NORTH CAROLINA TFC. NET	DAILY	2200
SUMTER SC	04/64	WR4AOI	SUMTER RPTR. ASSN 2-METER NET	MON	2130
TAZEWELL VA	75/15	WA4QKH	TRI-COUNTY 2-METER NET	SUN	2000
VIRGINIA BEACH VA	37/97	WR4AAC	VIRGINIA BEACH AREC NET	WED	2000
WHITE HALL SC	31/91	WR4AOL	COSTAL ARA 2-METER NET	THU	2100
WINCHESTER VA	22/82	WR4AGT	SHENANDOAH VALLEY SERVICE NET	DAILY	1915
WINSTON-SALEM NC	04/64	WR4ARD	FORSYTH COUNTY AREC/RACES NET	WED	2100

1½ Meters (220 Mhz) - FM

HILLSBOROUGH NC	2.34/3.94	WR4AGC	PIEDMONT 220 NET	TTH	2100
SAURATOWN MT NC	3.28/4.88	WR4AOW	CVRA INFORMATION NET	WED	2030

TWO METERS - SSB/CW/AM

CINCINNATI OH	145.02	MIDWESTERN SSB NET	STTH	2100
GREENSBORO NC	144.25	NORTH CAROLINA S.W.O.T.	TUE	2100
GREENVILLE SC	144.25	SOUTH CAROLINA S.L.O.T.	M-TH	2100
NORFOLK VA	145.80	HAMPTON ROADS EMERG. NET (AM)	MON	2000
WASHINGTON DC	145.10	MID-ATLANTIC 2-METER NET	WED	2100

SIX METERS

CHARLOTTE NC	50.40	CHARLOTTE HORNET NET (AM)	SUN	2100
CLEMSON SC	50.125	DIXIE NET (SSB)	WED	2100
GLENDALE SPGS. NC	50.12	NORTH CAR. 6-METER NET (SSB)	SUN	0900
RICHMOND VA	50.25	CENTRAL VIRGINIA NET (AM)	DAILY	1900

NET MANAGERS; Be sure to Give the CVRA a Plug. Encourage net checkins to Join the CVRA now, and receive the Journal. Thanks! Are there any changes to your net listing above? Send them to us for correction.

MIRAGE MP2
VHF WATTMETER

Special 109.95

The MIRAGE MP2 is designed to provide the VHF amateur with a versatile wattmeter, without having to use cumbersome add-ons or plug-ins.

It has three power ranges (50, 500, 1500 Watts) that provide easy reading, whether using it for low power FM or highpower SSB. The MP2 will read both forward and reverse (reflected) power, at the flip of a switch.

The MP2 has several features that have not been available on a single instrument before. One new feature is the ability to display average or peak power. The MP2 will read the peak power output of a SSB signal showing its true output. Another feature is the SWR capability. SWR is measured directly, without using extra charts or graphs. The SWR function may be used with as little as 1 or 2 Watts of forward power.

The coupler unit may be remotely mounted, up to 4 feet from the meter, for added installation convenience.

The SWR, PEAK/AVERAGE, and three power ranges team up to make the MP2 a must for every amateur interested in optimum VHF station performance.

In order to provide these extensive features, the MP2 contains the latest low power ICs powered by a 9 Volt battery or an optional AC adaptor. Many months of service may be expected from the battery alone.

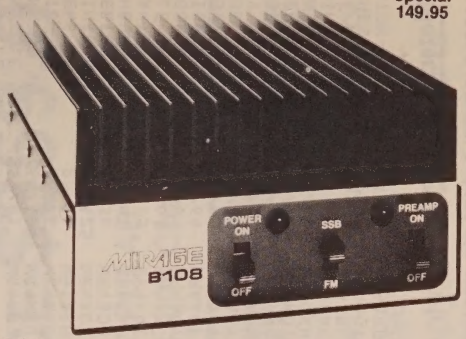
A low battery voltage indicator has been built into the MP2 to indicate, to the operator, when the battery needs to be changed.

SPECIFICATIONS

FREQUENCY RANGE	50 to 200 MHz
POWER RANGES	50, 500 and 1500 Watts (± 5% + 1% meter)
SWR SENSITIVITY	1 or 2 Watts
FUNCTIONS	Power — FORWARD/REVERSE, PEAK/AVERAGE and SWR
LINE IMPEDANCE	50 Ohms resistive
POWER REQUIREMENTS	9 VDC internal battery or optional AC adaptor
SIZE	5.75" x 4.5" W x 5.75" D
WEIGHT	3½ lbs.
WARRANTY	1 year parts and labor
PRICE	$119.95 Sugg. List

MIRAGE B108
VHF POWER AMPLIFIER

Special 149.95



MIRAGE presents the new generation Solid-State VHF Power Amplifier. The B108 incorporates the latest Solid-State circuits to provide crisp, clear communications on FM or SSB. The built-in Receive Preamp will provide a noticeable improvement in weak signal reception. Both the Power-Amp and Preamp may be operated from a remote location, by using the optional RC-1 Remote Control Head.

FEATURES:

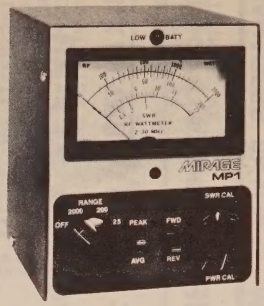
- Built-in Receive Preamp.
- Adjustable delay for SSB.
- Remote control operation with optional RC-1 Remote Control Head.
- Conservatively designed custom heat sink provides more than adequate cooling.
- Automatic infernal change over relay or may be keyed from the external transmitter.

SPECIFICATIONS:

FREQUENCY RANGE	144 to 148 MHz
RF POWER	5-15 Watts in — 80 Watts nominal out
MODES	SSB, FM and CW
RECEIVE PREAMP	10 db gain min. — 2.5 ± .5 db noise figure
DC POWER	13.6 VDC 10—12 Amps
WARRANTY	1 year parts and labor — except RF Power Transistors — which is 90 days
SIZE	5⅛" × 3" × 8"
WEIGHT	3 pounds
SUGG. LIST	$169.95

MIRAGE MP1
HF PEAK READING WATTMETER

Special 109.95



The MIRAGE MP1 is designed to provide the HF amateur with a versatile wattmeter, without having to use cumbersome add-ons or plug-ins.

It has three power ranges (25, 200, 2000 Watts) that provide easy reading, whether using it for low power CW, AM, FM or highpower SSB. The MP1 will read both forward and reverse (reflected) power, at the flip of a switch.

The MP1 has features that make it one of the most versatile wattmeters available today. The MP1 will read the peak power output of a SSB signal showing its true output. Another feature is the SWR capability. SWR is measured directly, without using extra charts or graphs. The SWR function may be used with as little as 1 or 2 Watts of forward power.

The coupler unit may be remotely mounted, up to 4 feet from the meter, for added installation convenience.

The SWR, PEAK/AVERAGE, and three power ranges team up to make the MP1 a must for every amateur interested in optimum HF station performance.

In order to provide these extensive features, the MP1 contains the latest low power ICs powered by a 9 Volt battery or an optional AC adaptor. Many months of service may be expected from the battery alone.

A low battery voltage indicator has been built into the MP1 to indicate, to the operator, when the battery needs to be changed.

SPECIFICATIONS

FREQUENCY RANGE	1.8 to 30 MHz
POWER RANGES	25, 200, 2000 Watts (+ 5% + 1% meter)
SWR SENSITIVITY	1 or 2 Watts
FUNCTIONS	Power — FORWARD/REVERSE, PEAK/AVERAGE and SWR
LINE IMPEDANCE	50 Ohms resistive
POWER REQUIREMENTS	9 VDC internal battery or optional AC adaptor
SIZE	5.75" × 4.5" W × 5.75" D
WEIGHT	3½ lbs.
WARRANTY	1 year parts and labor
PRICE	$119.95 Sugg. List

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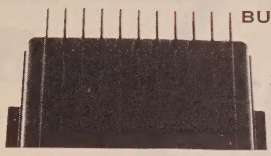

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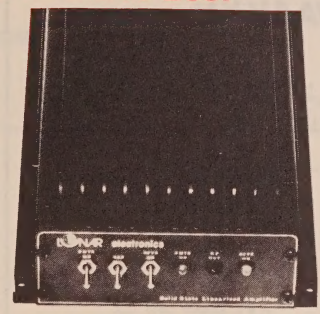

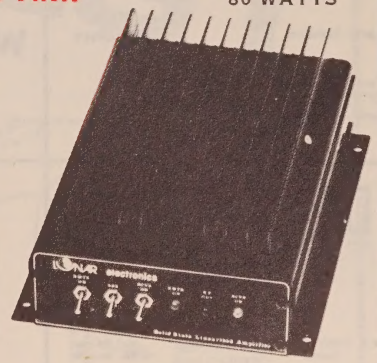

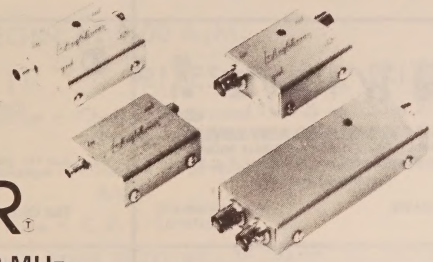

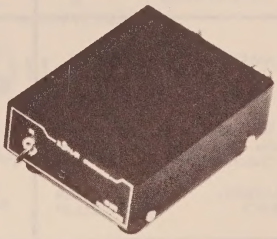

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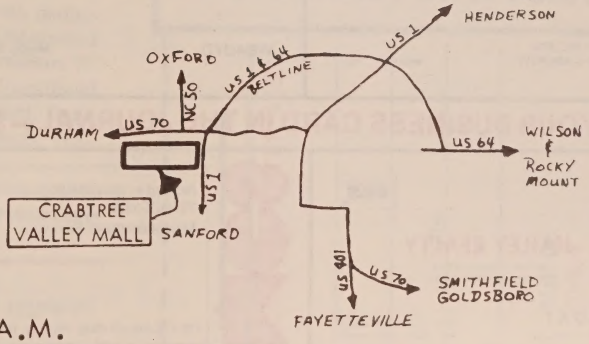

ACTIVITIES BEGIN AT 9:00 A.M.

★ PRIZES !!! PRIZES !!! PRIZES !!!

1st Prize - Choice of Kenwood TS520S or ICOM 211. Vickers Electronics of Durham aided RARS in the purchase of this prize.

2nd Prize - Kilowatt three-element Tri-Band beam. This prize presented by RARS.

3rd Prize - C.D.E. Rotator.

MANY OTHER PRIZES WILL BE DRAWN ALL DAY SUNDAY ! ! ! !

★ E-X-P-A-N-D-E-D FLEA MARKET (Covered)

★ WALK TO NEARBY MOTELS AND RESTAURANTS

★ FCC AMATEUR TESTS — 9:00 A.M. sharp on Sunday, April 22nd. If you send a completed form 610 to the attention of the RARS Hamfest at the address shown on the bottom of this sheet you will be pre-registered to take the exam which will speed up your processing. This is recommended by the FCC. If you cannot mail the form in advance, please complete and bring it with you. Exam registration and assignment will be in the East Community Room of the Crabtree Valley Shopping Center. The community room is located on the rear upper deck of the Mall.

TALK-IN SATURDAY AND SUNDAY
WR4ACF (146.04/146.64)
WR4AOE (146.28/146.88)

★ Hospitality room at Crabtree Mall west community room on Saturday evening, 7 til 11 P.M. Social and Door Prizes ! ! !

FOR ADDITIONAL INFORMATION, DETAILS, OR RESERVATIONS WRITE:
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- By Wayne Shevlin, WA4SNC

There is a network of teletypes throughout the country used by Deaf Persons to communicate with each other. The teletype printers have been obtained from Western Union, the telephone companies and other business. There is a need for more of these, and I thought Amateur Radio would be a good source. If most hams are like me, they have some gear that sits around and collects dust. If some of this gear happened to be a teletype printer, rather than letting it sit unused, it could be put to good used by a deaf person.

The kind of printer needed is Baudot. If anyone wishes to donate a printer it can be written off as a tax deduction on their Federal Income Tax. If anyone is interested in donating some teletype gear, contact Mr. William H. Peace, State Coordinator, N.C. Division of Vocational Rehabilitation, Council For Hearing Impairment, Dept. of Human Resources, P.O. Box 26053, Raleigh, N.C. 27611.

If you need any additional information, please feel free to contact me or Mr. Peace. Thank you for your time and assistance.

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THE CVRA 1979 RENEWAL HONOR ROLL OF REPEATERS

The renewal Honor Roll of repeater memberships tripled this year compared to last year. This year a total of 67 repeater groups renewed their full membership to the CVRA prior to DEC. 31, 1978 for the 1979 year. Last year there were 28 early bird groups responding. The CVRA gratefully acknowledged the following repeaters who had their 1979 dues paid PRIOR to Jan. 1, 1979:

NORTH CAROLINA

WR4AOE/4 - Asheboro
WR4AEV - Asheville
WR4ATQ - Boone
K4LZY/R - Burgaw
WR4AGC - Durham
WA4VTX/R - Elizabeth City
WR4ADK - Fayetteville
WR4ANN - Fayetteville
W4LPL/R - Fayetteville
K4SNI/R - Greensboro
W4GDF/R - Greenville
WR4ABP - Grifton
WR4AFV - High Point
WB4DBB/R - Hillsborough
WD4FVO/R - Jacksonville
WR4AYN - Kings Mtn.
WR4ARG - Lenoir
WR4BDA - Lexington
WR4BBA - Locust
WR4BDA - Lexington
WR4BBA - Locust
WR4AOX - Laurinburg
WR4AKB - Manteo
WR4BBN - Marion
WD4JMS/R - New Bern
WR4AOE - Raleigh
WA4PEN/R - Raleigh
K4PUV/R - Roanoke Rpds.
WR4BAN - Robbinsville
WR4AOW - Sauratown Mtn
WR4AEF - Seven Springs
WR4AZS - Statesville
N4SM/R - Waynesville
WR4ARD - Winston Salem

TENNESSEE

WA4DIU/R - Johnson City
WR4APU - Knoxville

SOUTH CAROLINA

WD4HEH/R - Cheraw
WR4AYE - Columbia
WR4AYE/4 - Columbia
WB4VLY/R - Columbia
W4NAT/R - Dorchester
WR4ABK - Ft. Mill
K4AUV/R - Gaston
W4AZT/R - Greenville
W4FHJ/R - Greenville
WR4AUE - Greenwood
WC4AAW/R - Lancaster
WR4AZM - Laurens
WR4ABB - N. Augusta
WR4ADP - N. Augusta
WR4ADP - Pickens
WC4ABD/R - Rock Hill
WR4AOI - Sumter
WR4BCM - Sumter
WR4AUS - Sumter-Shaw
WR4AQL - Whitehall

VIRGINIA

WA4YRJ/R - Blacksburg
WA4HTI/R - Covington
WB4GJG/R - Danville
WR4BDN - Danville
WR4ASW - Farmville
WR4ADY - Forest
WA4UAF/R - Kilmarnk-Sal
WR4AXO - Lynchburg
WB4IUS - Lynchburg
W4LGG/R - Petersburg
WR4ADI - Richmond
WR4BBU - South Hill
WR4AKS - Suffolk

GEORGIA

WA4LUC/R - Toccoa

DAFFYNITIONS

Timeout-Syndrome—Often followed by the statement: "Did I talk the repeater down again?"

calendar of coming events

The CVRA Journal will be glad to publish Events in your area taking place which are of interest to the entire area. Send information to CVRA Editor 1 month prior to Journal Publication date.

The following list was compiled with the gracious assistance of ARRL Roanoke Director, Phil Wicker, W4ACY. The list contains tentative dates for most hamfests.

1979 HAMFEST CALENDAR

FEBRUARY
18 . . . . . VIENNA, VA.

MARCH
17-18 . . . . . S.C. ARRL Conv. GREENVILLE, S.C.
24-25 . . . . . CHARLOTTE, N.C.
31-Apr. 1 . . . . . COLUMBUS, GA.

APRIL
22 . . . . . RALEIGH, N.C.
27-29 . . . . . DAYTON, OHIO

MAY
6 . . . . . GASTONIA, N.C.
19-20 . . . . . DURHAM, N.C.
19-20 . . . . . COLUMBIA, S.C.
*27 . . . . . ROANOKE, VA.

JUNE
3 . . . . . MANASSAS, VA.
31-Jul. 1 . . . . . W. Va. State ARRL Conv.

JULY
14 . . . . . CHARLESTON
20-22 . . . . . Nat'l ARRL Conv. BATON ROUGE, LA.
21 . . . . . CARY, N.C.

AUGUST
5 . . . . . WINCHESTER, VA.
*18-19 . . . . . BRISTOL, TENN.

SEPTEMBER
1 . . . . . CVRA Annual Meeting, SHELBY, N.C.
1-2 . . . . . SHELBY, N.C.
*1-2 . . . . . MORGANTOWN, W. VA

OCTOBER
7 . . . . . ROCK HILL, S.C.
13 . . . . . ASHEVILLE, N.C.
14 . . . . . EASTERN, N.C.
20-21 . . . . . NORFOLK, VA

*Date Not Confirmed to CVRA or ARRL

CLASSIFIED ADVERTISING

If you have equipment you would like to swap, sell, buy or trade you're invited to send us your want ads. Mail them to our Sales Manager listed on page 1 of the Journal. Ads are not limited to Amateur Radio items.

CLASSIFIED AD RATE: Non-Commercial or Commercial. $1.75 per ad in advance of Publication. (Max 30 words any one ad)

Ads must be submitted 30 days prior to publication. The CVRA assumes no responsibility as to the accuracy of description of equipment or its condition.

SYNTHESIZED 2M H/T. TEMPO S-1 144-148 Mhz. $349 w/pad $399. S-30 amp $89; S-80 amp $169. Take Wilson Mark II/pad on trade. EVERHART ELECTRONICS, Box 41, Lexington, N.C. 27292 (704) 249-8734.

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FOR SALE GEM QUAD antenna for 10, 15 and 20 meters. Also, Atronics Code Reader. Write or Call BILL STEED, WA4PNN, 4206 Galway Dr., Greensboro, N.C. 27406. (919) 292-0372.

WILSON 2M BEAM CLOSEOUTS: 7 ele, $15; 9 ele $20; 11 ele, $24. KLM 144-148-14 w/balun $69.95. 432-16LB $55. Cushcraft ARX-220 Ringe $26; Astron RS-20 Amp P/S $85. EVERHART ELECTRONICS, Box 41, Lexington, N.C. 27292 (704) 249-8734.

DON'T BE "N" FOR 79: Check your home repeater listing in the Journal, If it has an "N" beside it, that means they are not a member of the CVRA. Talk to them, urge to join $8.00 full membership. 2 reps receive Journal Free! Write CVRA P.O. 871, Kinston, N.C. 28501.

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- Optional remote speaker-microphone.
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SPECIFICATIONS

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Frequency coverage:
144 — 148 MHz.
Number of channels:
6 (3 provided, 3 optional).
Emission type:
F3
Batteries (not supplied):
AA size, NiCd (8 needed) or dry cells (7 needed).
Voltage requirement:
9.6 VDC ±10%, maximum 12 VDC.
Current consumption:
RX 200 mA (30 mA squelched)
TX 500 mA

Case dimensions:
67 x 49 x 171 mm.
Weight (less batteries):
400 g.

TRANSMITTER

Power output:
1 watt.
Deviation:
±5 kHz.
Spurious radiation:
60 dB down or better.
Microphone:
Condenser type, 2000 ohm impedance.

RECEIVER

Circuit type:
Double conversion superheterodyne.
Intermediate frequencies:
1st IF = 10.7 MHz
2nd IF = 455 kHz
Sensitivity:
0.32μV for 20 dB quieting.
Selectivity:
±20 kHz at 60 dB down.
Audio output:
500 mW @ 10% THD.

We Service All Makes Of Amateur Equipment

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For Assistance in Repeater Coordination, Frequency Coordination, Changes in Repeaters, and Any other Assistance You May Require from the CVRA, Contact Your Local Director or His Assistant.

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